

**STATE FOREST LAND  
ENVIRONMENTAL CHECKLIST**

**Purpose of Checklist:**

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

**Instructions for Applicants:**

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *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.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

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.

**Use of checklist for nonproject proposals:**

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

**A. BACKGROUND**

1. Name of proposed project, if applicable:

*Timber Sale Name: Power Saw*

*Agreement #: 30-085538*

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

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

**Pacific Cascade Region  
PO Box 280  
Castle Rock, WA 98611-0280  
Phone: (360) 577-2025  
Contact Person: Marcus Johns**

4. Date checklist prepared: 02/19/10

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

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

*a. Auction Date: 06/16/2011*

*b. Planned contract end date (but may be extended): 10/31/2012*

*c. Phasing: N/A*

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

**Yes.**

**Timber Sale**

*a. Site preparation:*

**Slash will be piled and burned as needed. Aerial or ground herbicide application may be done to minimize competition with conifer stands.**

*b. Regeneration Method:*

*c. The units will be hand planted with conifer species following harvest to promote the continuation of a healthy conifer forest with a diversity of tree species.*

d. *Vegetation Management:*

Vegetation management needs may be assessed from plantation ages three to eight. Vegetation control activities will occur as needed.

e. *Thinning:*

Pre-commercial thinning needs may be assessed at approximately 15 years of age for conifer species. Commercial thinning potential will be assessed at approximately 25 years of age. Thinnings will be done as needed to meet desired density, stocking, species diversity, and growth.

Roads:

Roads remaining at the termination of the sale will be used for future forest management activities such as administrative access, plantation assessments, and plantation maintenance when needed. Road maintenance and periodic ditch and culvert cleanout will occur as necessary. Future timber sales may use some of these roads for access.

Rock Pits and/or Sale:

The existing Sawmill Quarry and/or B-1321 Quarry will provide rock for this proposed sale. These quarries may be used as a rock sources for future road construction, reconstruction, and maintenance as needed for management of Department of Natural Resources lands. Further expansion of these quarries is not currently planned.

Other:

Firewood salvage may occur after harvest activities.

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): **Trap Creek.**

Link to DOE map: <http://apps/ecv.wa.gov/wqawa2008/viewer.htm>

Landscape plan:

Watershed analysis: **Willapa Headwaters**

Interdisciplinary team (ID Team) report:

Road design plan: **Available upon request at Pacific Cascade Region Office.**

Wildlife report: **Marbled murrelet biological assessment.**

Geotechnical report:

Other specialist report(s):

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

Rock pit plan: **Available upon request at the Pacific Cascade Region Office**

Other: **Spotted Owl Habitat Mapping, Forest Practices Board Manual, Forest Practices Activity Maps, Policy for Sustainable Forests (PSF 2006); State Soil Survey; Habitat Conservation Plan (HCP 1997); HCP Checklist; Riparian Forest Restoration Strategy (RFRS), Slope Stability Checklist; Planning and Tracking Report and associated maps; Road Maintenance and Abandonment Plan (RMAP): #R2502155, and Recommendations and Supporting Analysis of the Conservation Opportunities for the Marbled Murrelet Long-Term Conservation Strategy. The following documents are all generated by Department GIS layers: Weighted Old Growth Habitat Index (WOGHI); Marbled Murrelet Habitat Layer; USGS and GLO maps.**

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 known.**

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

HPA  Burning permit  Shoreline permit  Incidental take permit **1168 and PRT8125121**  FPA#2922015

Other: **5-year blanket HPA (Control # 120945-2)**

11. Give brief, complete description of our 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 specific information on project description.)

a. *Complete proposal description:*

Power Saw is a four-unit, 96 acre regeneration harvest, which will remove an estimated 4,417 MBF. This proposal is located in the Willapa Headwaters WAU. Eight trees per acre will be left mostly clumped and a few scattered throughout the units. This proposal will include new road construction, pre-haul maintenance, and road abandonment. Rock source will be from the Sawmill Quarry or the B-1321 Quarry. This timber sale consists of a mix of steep and flat topography. Units will be logged using both cable and ground systems.

Unit	Proposal Acres	RMZ/WMZ Acres	Sale Acres	Leave Tree Clump Acres	Harvest Acres
<i>name</i>	<i>gross</i>		<i>*8=leave trees</i>	<i>clumped acres</i>	<i>net</i>
1	53	11	42	4	38
2	16	3	13	1	12
3	22	6	16	2	14
4	46	12	34	2	32
Totals	137	32	105	9	96

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

*Pre-harvest Stand Description:*

Unit one is approximately 62 years old. It consists primarily of Douglas-fir and western hemlock. Secondary species include red alder and western redcedar. The forest floor consists of mainly sword fern and Oregon grape. Unit one consists of moderate to steep topography and will be logged using both cable systems and ground-based equipment.

Unit two is approximately 62 years old. It consists of primarily of Douglas-fir and western hemlock. Secondary species include red alder and western redcedar. The forest floor consists of sword fern, vine maple, and some salal, with devil's club and salmonberry in the draws. The majority of the unit is steep and will be logged using cable system with small portions of ground-based equipment used in the north end of the unit.

Unit three is approximately 52 years old. It consists of primarily Douglas-fir and western hemlock. Secondary species include red alder and western redcedar. The forest floor consists of sword fern, vine maple, and some salal, with devil's club and salmonberry in the draws. Unit three consists of moderate to steep topography and will be logged using both cable systems and ground-based equipment.

Unit four is approximately 62 years old. It consists of Douglas-fir, western hemlock and red alder. The forest floor consists of sword fern and vine maple with devils club and salmon berry in the draws. The majority of unit is steep and will be logged using cable system with portions of ground-based equipment used along the north and eastern edges.

*Type of Harvest:*

This proposal is a variable retention harvest of 96 net harvest acres.

*Overall Unit Objectives:*

- 1) Produce revenue for the State Forest Transfer Trust (01), Common School and Indemnity Trust (03), and Scientific School Trust (10) through the production of saw logs and pulp material.
- 2) Provide for wildlife and riparian habitat by developing vertical stand structure and age class distribution in the future stand.

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		1642	.6	
Reconstruction		615		
Abandonment		100		
Bridge Install/Replace				
Culvert Install/Replace (fish)				
Culvert Install/Replace (no fish)	1			

12. Location of 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. (See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

a. Legal description:

Units 1, 2, 3 and the Sawmill Quarry are located in Section 3 of Township 12 North, Range 08 West, W.M.

Unit 4 is located in Section 4 of Township 12 North, Range 08 West, W.M.

The B-1321 Quarry is located in Section 30 of Township 13 North, Range 08 West, W.M.

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

Units 1, 2, 3 and 4 are all located approximately 10 miles southwest of Menlo, Washington. The route from Menlo is via State Route 6 to Oxbow Road and the Sawmill Mainline.

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> under "SEPA Center.")*

WAU Name	WAU Acres	Proposal Acres
WILLAPA HEADWATERS	62849.6	
Sub-basin 13	2801.8	69
Sub-basin 15	1595	68

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 Willapa Headwaters WAU. Agriculture and home sites are located in the valleys near the major streams with some home sites located in the uplands. There appears to be a recent trend towards increasing conversion of agriculture and forestry lands to home sites in the low to middle elevations. The uplands are primarily managed for timber production. Ownership includes large industrial forests, small private forests, and Department of Natural Resources managed forests. Forest stands within the WAU appear to be almost exclusively second and third growth stands. The number of Forest Practices shown on the WAU map (referenced above on the Department's website) along with observations within the WAU

indicates that timber stands are intensively managed on relatively short rotations. Management includes regeneration harvests, thinnings, partial cuts, reforestation, and stand maintenance activities.

The following tables are an estimated summary of past and future activity on Department of Natural Resources managed land and privately managed land in the Willapa Headwaters WAU (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within these WAU's. The source of this information only provided the acreage on the WAU level. WAU reports were requested and generated February 25, 2010.

Willapa Headwaters WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF PROPOSED EVEN-AGED HARVEST IN THE FUTURE (FY 2009/2010)	ACRES OF PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE (FY 2009/2010)
DNR MANAGED LAND	19654 (31%)	246	4	350	UNKNOWN
PRIVATE OWNERSHIP	43196 (69%)	1623	281	UNKNOWN	UNKNOWN
TOTAL	62850	1869	285	350	UNKNOWN

The Department of Natural Resources has a multi-species Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service concerning threatened and endangered species and their habitats, which requires the Department to manage landscapes to provide and sustain long-term habitat in exchange for an Incidental Take Permit. This agreement substantially helps the Department to mitigate for harmful cumulative effects related to management activities. The applicable strategies incorporated into this proposal are as follows:

- Retaining Riparian Management Zones (RMZs) averaging 185 feet wide along type 3 streams; 100 feet wide along type 4 streams, measured from the outer edge of 100 year floodplains. An Equipment Limitation Zone (ELZ), a 30 foot wide strip measured from the ordinary high water mark of type 5 streams located inside the proposed units and adjacent to the units, will be utilized to decrease the possibility of sediment delivery and loss of stream function.
- Evaluating the proposal for potential slope instability.
- Retaining a minimum of 8 trees per acre (greater than 10 inches Diameter at Breast Height) clumped and scattered throughout the units.
- Analyzing, designing, and constructing roads to minimize affects on the environment.
- Protection of occupied Marbled Murrelet habitat and modeled habitat on a landscape level within coastal ownership blocks. Modeled habitat and occupied habitat have been excluded from harvest. Over time this will contribute to increased older forest retention and will improve the structural diversity of forests across the landscape. Additionally, to avoid noise disturbance to nesting murrelets, the Department of Natural Resources voluntarily requires daily timing restrictions on heavy equipment operations within 0.25 mile of occupied marbled murrelet habitat during the critical nesting season.

Retaining RMZs will protect water quality, stream bank integrity and stream temperatures. RMZs will develop older forest characteristics that, in combination with other strategies, will help support older forest dependant wildlife populations.

The strategy of retaining 8 trees per acre (greater than 10 inches Diameter at Breast Height) in the unit will provide legacy elements for recruitment of future snags, coarse woody debris, multi-layered stands, and large diameter trees. In combination, these features will provide elements of older forest habitat characteristics within the new plantation.

After harvest, tree seedlings will be planted to complement natural regeneration that is expected to occur. Though disturbed, native plants such as grasses, ferns, salal, salmonberry, and huckleberry will remain on site after logging and persist within the western hemlock/sitka spruce timber type.

To reduce the risk of potential erosion, road cut banks will be re-vegetated prior to the onset of wet weather to prevent sediment delivery and maintain soil stability. Potentially unstable slopes have been protected by removing approximately 0.1 acres from the originally proposed harvest area. The retained trees will continue to evapotranspire. Besides reducing the potential for management activities to increase the frequency and severity of mass wasting events, the retained trees and vegetation will also continue to provide wildlife habitat.

A regular maintenance schedule will be followed to allow for proper road surface run-off and drainage. Haul routes for this proposal have been evaluated for potential environmental impacts. To assure sediment is controlled during hauling, cross-drains, sediment ponds, and other structures will be used to disconnect ditch water from flowing streams. Road ditch water will be routed to the forest floor for filtering prior to entering flowing watercourses. New road construction will be located on or near ridge-top locations and not proximal to any streams. New road construction is minimal with majority of haul route on existing roads. Road system analysis and design required under the HCP and analysis required under the Forest Practices RMAP process in the Browning Management Block was completed and approved.

Trap Creek has a single stretch listed for temperature under 303(d) water at the confluence of Trap Creek and Willapa River. The proposal should have no impact on the listed waters due to the listed area being located approximately 1.5 miles downstream from the proposal area. In addition, a 185 foot site index buffer has been placed on all type 3 streams and a minimum 100 foot buffer has been placed on all type 4 tributaries to Trap Creek. A 30 foot equipment limitation zone has been placed on all Type 5 streams. Stream temperature on type 3 and 4 streams will not be affected since no trees that shade the streams will be removed, and no trees that could potentially contribute to down woody debris will be removed or displaced.

A completed watershed analysis for the Willapa Headwaters WAU has been reviewed for recommended management objectives and prescriptions. The following WAU delivery prevention and mitigation measures have been applied and listed in the Watershed Analysis Worksheet:

- Lead-end suspension required on all cable settings.
- Minimal new construction (<2000') for 6 landing spurs. No new road construction proximal to streams. The majority of sale roads only require pre-haul maintenance.
- Road Landing and Maintenance Plan for WAU has been reviewed and BMPs implemented where feasible. All sale roads were reviewed by a Department Engineer.

**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).*

The Willapa Headwaters WAU, located at an elevation range of 20 to 2,100 feet, has topography characterized as rolling with deep “V”-shaped draws in higher elevations. The WAU averages 70-110 inches of rain per year, which supports a dominant western hemlock timber type in the west portion of the WAU and a dominant Douglas-fir timber type in association with hardwood species such as red alder in the east portion of the WAU. Trap Creek flows west into the Willapa River, then to Willapa Bay.

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

The proposal fits the general WAU description above.

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

The steepest slope on site is approximately 90%.

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 prime farmland. *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 or Soil Complex Name
3983	SILT LOAM
3984	SILT LOAM
0665	SILT LOAM
4356	SILT LOAM
0574	SILT LOAM
0577	SILT LOAM
0664	SILT LOAM
8771	SILT LOAM

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

Yes.

1) *Surface indications:*

Oversteepened slopes as well as broken, uneven and hummocky ground were observed within the immediate vicinity of the sale.

2) *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:

There is evidence of slope failures within the sub-basins. These are generally associated with slopes greater than 70% within convergent landforms such as bedrock hollows and inner gorges. These landforms, per local knowledge, typically occur within the RMZs, lower slopes of the main draws, and on headwalls at the top of steep draws. Ancient deep-seated landslides are also present in the sub-basin.

3) *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:

*Associated management activity:*

There are no known slope failures associated with roads or harvest activities within the sub-basins.

4) *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:

A Department of Natural Resources geologist remotely reviewed all units of the proposal and found that portions of Unit 4 were within part of an ancient deep-seated landslide. After a field visit by the geologist, it was determined that the proposal area was not located on the toe of the landslide nor was it located on any areas with signs of recent instability. There was no evidence of recent deep-seated landslide movement within the harvest unit. Also during the onsite visit a bedrock hollow was discovered along the lower portions of the slope adjacent to a type 4 stream. The feature was close enough to the stream to be within the RMZ and is bounded out of the sale area with “Timber Sale Boundary” tags.

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

The majority of sale roads are existing with less than 1,800 feet of new construction. Most of the existing roads used for this proposal are located on ridge tops and all new construction will be designed with cross-drain culverts and ditch-outs to minimize the potential for mass wasting and potential slope failure. Shovel logging will not be allowed on slopes over 35% and all cable settings will require lead end

suspension at a minimum. The proposal area was visited by a Department geologist, and areas of concern were identified and excluded from the harvest area.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.  
*Approx. acreage new roads: 0.6      Approx. acreage new landings: 8.0      Amount of fill material:*  
*Fill source: Native material*

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

**Some erosion could occur as a result of building new roads, installing culverts, and hauling timber.**

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):*

**Less than 2% of the sale area will be on impervious surfaces (gravel roads/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.)*

**Measures to reduce erosion on roads or during active road construction**

- Seasonal timing restrictions will prohibit road construction from September 30<sup>th</sup> to May 1<sup>st</sup> to reduce activities during wet weather conditions, unless authorized by the Contract Administrator due to dry weather.
- Soils exposed during road construction may be grass seeded.
- Roads will either be crowned, ditched, and cross-drained; or out-sloped.
- Cross drains will be installed properly and maintained.
- Sediment delivery will be addressed as needed during operations and may include the use of water bars or silt traps.
- There will be periodic maintenance and inspection of the road system to insure proper drainage.

**Measures to reduce erosion during active logging operation:**

- Timber shall be felled and yarded away from all streams.
- Ground based yarding will be restricted to slopes less than 35% and during dry soil conditions only.
- The lead-end of logs will be suspended during all yarding operations.
- Full suspension will be utilized over type 5 streams
- The potential for sediment delivery will be addressed as needed during operations and may include the use of water bars or silt traps.

**2. Air**

a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

**No emissions are anticipated other than minor amounts of heavy equipment exhaust, road dust created by harvest hauling, and smoke created from burning landing brush piles.**

d. 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:

**Slash pile burning will be done in the fall during the rainy season under the direction of the State's Smoke Management Program. A burn permit will be obtained before burning begins.**

**3. Water**

a. Surface:

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.)*

a) *Downstream water bodies*

**Unnamed tributaries flow into Trap Creek which flows into the Willapa River and eventually into the Pacific Ocean.**

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)
Unnamed	3	1	185
Unnamed	4	7	100
Unnamed	5	10	30' equipment limitation

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

**Type 3 and 4 RMZs are no harvest buffers. They have been bounded out with "Timber Sale Boundary" tags and pink flagging. Shovel logging will not be allowed on slopes over 35% and all cable settings will require lead end suspension at a minimum. Leave trees were placed around**

portions of type 5 streams, which will also be protected by a 30-foot Equipment Limitation Zone. When cable yarding over type 5 streams, full suspension will be required.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) to 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):

Trees will be felled away from all streams. Trees may be cut in RMZs for safety or operational needs, but will be left in place to provide large woody debris function in the riparian area.

Tailhold cables may be strung through the type 3 and type 4 RMZs, however, no timber will be yarded through them. Timber harvest may occur as close as 185 feet (required average RMZ width) to the type 3 streams. Timber harvest may occur as close as 100 feet (required minimum RMZ width) to all type 4 streams in the proposal area.

Type 5 streams may have tailhold cables strung through them as well as timber yarded across them or across them in the ground-based harvesting areas (less than 35% slopes). Full suspension is required across all type 5 streams. If yarding occurs near type 5 streams, a 30-foot Equipment Limitation Zone will be utilized to maintain stream function, stream bank integrity and minimize possible sediment delivery.

A culvert replacement (replaced with a larger culvert) on a type 5 stream along the M-1200 road at station 23+20 will be included with this proposal.

- 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.

None.

- 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:

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.  
 No  Yes, describe location:

Work will be conducted within a type 5 stream to replace an existing culvert with a larger culvert at station 23+20 on the M-1200 road.

- 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:

This proposal could possibly introduce minor amounts of sediment into the streams associated with this proposal during wet weather within or adjacent to the proposal area as a result of road building and harvest operation activity. The erosion control measures and operation procedures outlined in B.1.d.5. and B.1.h are expected to minimize sediment delivery.

- 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?

Yes. Generally, the sub-basin soils or terrain susceptible to surface erosion or mass wasting are located on slopes steeper than 70%.

Based upon current Department of Natural Resources timber harvest management practices the potential for eroded material to enter surface water is minimized.

- 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:

During the winters of 2007 and 2009, suspected 100-year precipitation events occurred. The storms set rainfall and flood level records in Southwest Washington and Northwestern Oregon. The events caused a some shallow mass-wasting events. Many stream channels were affected by these flood events. The full extent and long-term impacts across the WAU from these storms is not known due to varying ownerships.

- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?  
 No  Yes, explain:

This proposal could possibly introduce small amounts of sediment into the streams adjacent to the proposal area as a result of road building and harvest operations during early stages of activity. The erosion control measures and operation procedures outlined in B.1.f and B.1.h are expected to minimize any sediment delivery.

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

In the Willapa Headwaters WAU, 2.6. Road densities in sub-basins are similar.

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:

- 11) 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 WAU in significant ROS zone  
 Approximate percent of sub-basin(s):

- 12) 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?

- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?  
 No  Yes, describe observations:

Normally, there are few significant changes associated with peak flows in the WAU or sub-basins. During the winters of 2007 and 2009, suspected 100-year precipitation events occurred. A some stream channels in the WAU were altered during these events due to high stream flow.

- 14) 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.

This proposal may slightly change the timing, duration, and/or magnitude of peak flows and stream flows may increase slightly during low flow periods due to decreased transpiration and canopy interception.

- 15) 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:

- 16) 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.

- Type 3 and 4 no harvest RMZs to protect stream banks from erosion.
- The proposal's units are each less than the 100 acres (U1 = 38 acres, U2 = 12 acres, U3 = 14 acres, U4 = 32 acres) to minimize impacts to watershed hydrology.
- Leaving at least 8 trees per acre for snag recruitment and green tree retention.
- Allowing green-up (regenerated stands that are either 4 ½ feet tall or 5 years of age) of adjacent stands to minimize impacts to watershed hydrology.
- See B.1.h for further protection measures.

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? 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.

Minor amounts of oil, fuel, and other lubricants may inadvertently be discharged to the ground as a result of heavy equipment use or mechanical failure. No lubricants will be disposed of on-site. All spills are required to be contained and cleaned-up. This proposal is expected to have no impact on ground water.

- 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:

a) Note protection measures, if any.

c. Water Runoff (including storm water):

- 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 from roads and intercepted subsurface flow will be collected by roadside ditches and diverted onto the forest floor to allow infiltration. Ditch-outs and cross drain culverts will be placed to minimize the amount of ditch water directly entering existing stream channels.

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

Logging slash may enter type 5 streams, but will be removed prior to the completion of harvest operations.

a) Note protection measures, if any.

Harvest units have been designed to minimize harvest activity over or adjacent to type 5 streams. A 30-foot Equipment Limitation Zone will be enforced in accordance with current Forest Practices rules.

- d. Proposed measures to reduce or control surface, ground, and runoff water 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.)

See surface water, ground water, and water runoff sections above, questions B-1-h, B-3-a-1-c, B-3-a-16, and B-3-c-2-a.

4. Plants

a. Check or circle 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, vine maple  
grass  
pasture  
crop or grain  
wet soil plants: cattail, buttercup, bullrush, skunk cabbage, devil's club, other:  
water plants: water lily, eelgrass, milfoil, other:  
other types of vegetation: swordfern  
plant communities of concern:

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.

Approximately 4,417 MBF of Douglas-fir, western hemlock, red alder and western redcedar will be harvested from the proposal area. Shrubs such as huckleberry and salmonberry may be disturbed during harvest and site preparation activities.

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")

**Unit One:** To the north is a 2 year-old harvest unit planted in early 2010 planting with Douglas-fir after salvaging blowdown from the December 2007 storm. To the east is a type 4 RMZ with Power Saw Unit 2 on the opposite side. To the south is an estimated 9 year-old plantation of mixed conifer and red alder on private ownership. To the west is a 52 year-old stand of mixed conifer and red alder.

**Unit Two:** To the north and east is an 11 year-old plantation of Douglas-fir. To the east is an 11 year-old plantation of Douglas-fir. To the south is an estimated 9 year-old plantation of mixed conifer and red alder on private ownership. To the west is a type 4 RMZ with Power Saw Unit 1 on the opposite side.

**Unit Three:** To the north is an 11 year-old plantation of Douglas-fir. To the east is an 11 year-old plantation of Douglas-fir. To the south is a 4 year-old plantation of Douglas-fir. To the west is a type 4 RMZ with an 11 year-old plantation of Douglas-fir on the opposite side and to the northwest.

**Unit Four:** To the north is a 2 year-old unit planted in 2010 planting with Douglas-fir after salvaging blowdown from the December 2007 storm, and a 68 year-old stand of mixed conifer and red alder. To the east is a 4 year-old and 22 year-old plantation of Douglas-fir, and a 73 year-old stand of mixed conifer. To the south is a 15 year-old Douglas-fir plantation. To the west is a type 3 RMZ, and beyond that a 4 year-old Douglas-fir plantation.

2) Retention tree plan:

A combination of Douglas-fir, western redcedar, bigleaf maple and red alder were left for green tree retention and snag recruitment. Reserve tree numbers were based on leaving eight trees per acre. Trees were left individually and in clumps. This type of leave tree pattern is conducive to a safe harvest operation and allows the distribution of wildlife trees throughout the proposal. When selecting wildlife trees, the highest preference was given to trees having form defects that may be desirable for birds, the largest trees, and the most windfirm species.

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

None found in database search.

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

Retention tree clumps are identified across the harvest area. Some clumps were selected for their species diversity of native flora. These clumps will provide a local seed source for native overstory and understory species. Some natural regeneration of native species will occur on site after harvest. Wildlife trees were left in areas to protect snags, large down logs, advanced regeneration, type 5 streams, and potentially unstable slopes. Trees with defects such as split or broken tops, dominant crowns, large diameters and large limbs were favored as leave trees to enhance wildlife potential.

5. Animal

a. Circle or check any birds animals or unique habitats which have been observed on or near the site or are known to be on or near the site:

- birds: hawk, heron, eagle, songbirds, pigeon, other: marbled murrelet  
mammals: deer, bear, elk, beaver, other:  
fish: bass, salmon, trout, herring, shellfish, other:  
unique habitats: talus slopes, caves, cliffs, oak woodlands, balds, mineral springs

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

Unit 4 of this proposal is located adjacent to a stand of occupied and modeled marbled murrelet (*Brachyramphus marmoratus*) habitat. Approximately 0.25 mile south of unit 4 is an additional stand of occupied and modeled marbled murrelet habitat.

- 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, which is part of the Pacific Northwest forests. The area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl. However, neotropical migrants readily utilize a suite of forested habitat types for nesting and foraging during the breeding season, and as staging areas prior to migration.

- d. Proposed measures to preserve or enhance wildlife, if any:

This sale has been designed to comply with the Department's HCP and provide for the protection of wildlife and their habitats. Scattered and clumped leave trees allow for feeding, roosting, nesting, and areas for neotropical migratory birds to use. Well engineered and constructed roads reduce potential water quality impacts for down-stream fish populations. Grass seeding exposed soil aids water quality and provides forage. Large diameter leave trees, and leave trees with unique crowns, will remain post harvest to enhance the wildlife habitat value of the future stand. The regenerated stand will be composed of mixed conifer species.

- 1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

o Riparian habitat

- No harvest RMZ buffers on type 3 and 4 streams to provide the following:
  - Maintaining or restoring freshwater habitat for salmonid species,
  - Contributing to the conservation of other species that are dependent upon aquatic and riparian areas.

This is accomplished by identifying riparian and wetland areas and ensuring that management activities within those areas adequately protect riparian function.

Riparian function can be viewed from both ecological and perspectives. From an ecological perspective, riparian function can be viewed as providing habitat for numerous plant and animal species including clean water, shade, large woody debris and detrital nutrients for salmon habitat, damp soil and logs for terrestrial amphibian habitat, snags for cavity nesting birds, etc. From a societal perspective, riparian function includes production of commodities and other services for human benefit. Salmon, wildlife, and timber are examples of the commodities produced by riparian ecosystems. The delivery of high quality water, flood control, and recreation are examples of services provided by riparian ecosystems.

- Equipment Limitation Zone on each side of type 5 streams
- Full-suspension over type 5 streams

o Upland habitat

- Ground-based harvest restricted to slopes less than 35%
- A minimum of 8 leave trees per acre were left clumped and scattered to provide additional structure in the regenerated stand.

o Marbled Murrelet habitat

- Unit 4 of this proposal is located immediately adjacent to one occupied and one modeled (reclassified) marbled murrelet habitat. There is also a second occupied stand located approximately 0.25 miles south of Unit 4
- This proposal includes:
  - Cutting trees located within 300 feet of the occupied stand, but no trees will be cut within 165 feet of the stand.
  - Constructing road within 165 feet of the occupied stand but no trees will need to be cut for construction.
  - All operations will stay out of adjacent modeled (reclassified habitat)
- With Unit 4 being within 0.25 miles of occupied stands heavy equipment will be restricted from operating one hour before to two hours after official sunrise and one hour before to one hour after official sunset between April 1 and August 31.

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.

No.

- 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:

None.

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 special emergency services that might be required.

There are no special emergency services required at this time. In the event of a lubricant spill the Purchaser will contact the Department of Natural Resources and the Department of Ecology.

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

**The cessation of operations may occur during periods of time when the risk of fire is increased. Fire tools and pump trucks and/or pump trailers will be required on site during fire season. No oil or lubricants will be disposed of on site.**

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 long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

**Log trucks will be using forest roads, county roads and State Route 6. This is a normal activity for this area, and is consistent with existing traffic. Noise will be increased during daylight hours due to the operation of heavy machinery.**

- 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? (Site includes the complete proposal, e.g. rock pits and access roads.)

**State land associated with this proposal is managed for timber production by the Department of Natural Resources. The private property south of Units 1 and 2 is managed by a private timber company for timber production.**

- b. Has the site been used for agriculture? If so, describe.

**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?

**Long-Term Forestry.**

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

**The comprehensive plan designation is resource lands, forest of long term significance.**

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

**Not applicable.**

- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

**Yes. All the units have been identified per P&T special concerns report as 05-W00001 - "Willapa Headwaters WAU".**

- 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:

**This proposal is consistent with current landscape objectives. There is no change to the existing land use, and no impacts from adjacent land uses on this proposal.**

9. Housing

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

**None.**

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

None.

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

None.

10. **Aesthetics**

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

Not applicable.

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

**Views in the immediate area will be temporarily altered by the removal of trees. This site is not part of any views from communities or public corridors.**

- 1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*  
 No  Yes, viewing location:

- 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:

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

Not Applicable.

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

None.

11. **Light and Glare**

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

None.

- 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?

**There is no designated recreation on the proposal area. However, hunting, hiking, horseback riding, mountain biking, mushroom and berry picking, and other informal outdoor recreation activities may occur on the proposal area.**

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

**Recreation may be temporarily displaced during road building and harvest activities.**

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

**No proposed measures are necessary because informal recreation will only be displaced for the short-term and then will resume.**

13. **Historic and Cultural Preservation**

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

No.

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None.

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

*(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)*

This proposal was reviewed for archeological/historic resources using the Department's Planning and Tracking database and USGS and GLO maps. In the event that any unknown archaeological resources are encountered, ground disturbing activities would be halted and an Agency Archaeologist will be contacted to survey the site and develop a site protection plan. The Department's Inadvertent Discovery Plan is available at the Region office or at:

<http://www.dnr.wa.gov/BusinessPermits/Topics/AppraisalPackets/Pages/Home.aspx>.

14. **Transportation**

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

**Forest roads lead to Oxbow Road, which leads to State Route 6.**

- 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 site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

**Not applicable.**

- c. How many parking spaces would the completed project have? How many would the project eliminate?

**None.**

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

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

**This proposal will increase the traffic temporarily. Traffic may increase up to 20 vehicle and log truck round trips per day, but should not affect the overall transportation system in the area.**

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

**No.**

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

**Up to 20 round trips per day could occur during road building and logging operations. After harvest activities are complete, occasional vehicular trips to the site will be generated for future forest management purposes.**

- 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, health care, schools, other)? If so, generally describe.

**None.**

- b. Proposed measures to reduce or control direct impacts on public services, if any.

**None.**

16. **Utilities**

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

**None.**

- 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.

**Not Applicable.**

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.

Completed by: *D. S. L. Mary Roberts* FORESTER 2 Title Date: 1/25/11

Reviewed by: *Marcus A. Johns* PSM Title Date: 2/8/11

Comments: \_\_\_\_\_