

**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: Brokedown Palace*

*Agreement #: 30-086386*

2. Name of applicant: **Dept. of Natural Resources**

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

**Northwest Region  
919 N. Township Street  
Sedro-Woolley, WA 98284**

**Laurie Bergvall  
Telephone (360) 856-3500**

4. Date checklist prepared: **October 23, 2010**

5. Agency requesting checklist: **Dept. of Natural Resources**

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

a. *Auction Date: August 24, 2011*

b. *Planned contract end date (but may be extended): September 30, 2013*

c. *Phasing: Does not apply.*

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: Logging slash generated from this proposal may be piled, possibly burned, or removed to allow adequate planting spots upon completion of harvest. To be surveyed following harvest to assess need for chemical application.*

b. *Regeneration Method: Hand plant Douglas-fir and western redcedar at approximately 360 stems/acre, tentatively scheduled for February 2015.*

c. *Vegetation Management: To be surveyed 3-5 years following planting to assess need for treatment.*

d. *Thinning: To be assessed 12-15 years following planting to verify need for PCT.*

*Roads: The MF-ML (Middle Fork Nooksack River Mainline), MF-55, and MF-25 roads will provide access for future land management activities. Roads will have routine annual maintenance, which may include ditch and culvert cleanout and road grading as needed, complying with the approved RMAP 2800010L.*

*Rock Pits and/or Sale: The St. Stephen Pit will continue to be used for future timber sale road construction and road maintenance activities. Onsite rock may be used for road construction, if rock sources are discovered along haul routes or within the sale area.*

Other: Potential firewood collection or other non timber commercial products.

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)  dissolved oxygen:

These listings were made for the Middle Fork Nooksack River, Canyon Creek, and Porter Creek

This information was taken from the Washington State Department of Ecology website:

[www.ecy.wa.gov/programs/wa/303d/305breport/305b\\_index.htm](http://www.ecy.wa.gov/programs/wa/303d/305breport/305b_index.htm)

Landscape plan:

Watershed analysis:

Interdisciplinary team (ID Team) report:

Road design plan: Available at NW Region Office.

Wildlife report:

Geotechnical report:

Other specialist report(s):

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

Rock pit plan:

Other: State Soil Survey, 1992; EIS for Policy for Sustainable Forests, June 2006; Habitat Conservation Plan (HCP) & Environmental Impact Statement, September 1997; HCP Riparian Forest Strategy, July 2006.

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. No.

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

HPA  Burning permit  Shoreline permit  Incidental take permit  FPA # \_\_\_\_\_  Other:

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 specific information on project description.)

a. *Complete proposal description: The proposal area considered for this harvest activity is located on approximately 99 acres, located in Section 19 of Township 38 North Range 6 East, W.M, approximately 16 miles southeast of Deming, WA. The proposal is surrounded by DNR and large industrial ownerships. The sale area involves 1 unit, approximately 63 net acres of Variable Retention Harvest (VRH) of Douglas-fir, western hemlock, western redcedar, bigleaf maple and red alder. (Harvest area was determined by Garmin GPS systems). Streams have all been typed according to the DNR Trust Forestland HCP Water Typing Key, WAC 222-16-031.*

The VRH unit boundaries are defined by Riparian Management Zones (RMZ's), harvest edges and topographic breaks. The difference in gross proposal area versus net harvest area is due to areas excluded for green tree patches and riparian management zones.

Gross harvest area: 99 acres  
 Estimated volume: 2,036 MBF  
 Net area Unit 1: 63 acres  
 Right-of-way areas: 2.5 acres  
 RMZ area: 30 acres  
 Leave tree area: 3 acres

b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives. The pre-harvest stands of natural second growth timber consist of Douglas-fir, western redcedar, and western hemlock, red alder, and bigleaf maple, with an origin date of approximately 1931. The stand varies from 270 to 300 trees per acre across proposal. The average diameter of the Douglas-fir in this stand is 22" diameter at breast height (DBH) with an average height of 120 feet. The average diameter of western hemlock in these stands is 16" DBH with an average height of 90 feet. Stand volumes range from approximately 20-40 mbf/acre. Snags, cedar stumps, and down woody debris are attributes of this stand. There is an under story of salmonberry, sword fern, huckleberry, elderberry, and moss. This information is taken from the DNR Forest Resource Inventory System and onsite data collection during presale layout.*

Type of harvest: Variable Retention Harvest  
 Logging System: Cable and ground-based harvesting systems

Objectives for this sale include generating revenue for the State Forest trust (01) and Common School trust (03); maintaining or improving the biological productivity of the site, retaining and enhancing short and long-term forest structural diversity, minimizing soil and water quality impacts; protecting habitats and functions of typed waters; and meeting or exceeding requirements of the HCP, Policy for Sustainable Forests (June 2006), and Forest Practice Rules.

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

Type of Activity	How many	Length (feet) (Estimated)	Acres (Subgrade) (Estimated)	Fish Barrier Removals (#)	Steepest Side Slope Road Crosses
Construction		0	0		0
Reconstruction		0		0	60
Abandonment		0	0	0	0
Temporary construction		1500	2.1		80
Bridge Install/Replace	0	0			
Culvert Install/Replace (fish)	0				
Culvert Install/Replace (no fish)	7*				

\*All culverts to be installed (this includes both typed stream crossings and relief culverts).

The MF-55 road will require full bench construction with end haul from station 104+81 to station 121+45. Roads with side slopes exceeding 50 percent will be full bench construction. A Road Use Permit (RUP) is being acquired from an adjacent landowner.

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: The sale area is located in Section 19 of Township 38 North, Range 6 East. The St. Stephen Rock Pit is located in Section 18 of Township 38 North, Range 6 East. Mainline reconstruction will occur on private land in Sections 19 and 20 of Township 38 North, Range 6 East. Existing road across private land will be used in Sections 20 and 21, Township 38 North, Range 6 East.
  - b. Distance and direction from nearest town (include road names): From Deming, travel 4.4 miles east on Highway 549 to Mosquito Lake Road. Turn right on to Mosquito Lake Road, travel south 4.8 miles to Forest Service Road 38, also known as Middle Fork Nooksack River Mainline (MF-ML). Turn left, travel east 2.5 miles, turn left (north) onto the MF-25 for the St. Stephen Rock Pit. Continue traveling east for the harvest unit 2.2 miles and stay right on the MF-ML, travel 0.2 miles to the existing gate and bridge. Pass through the gate, travel 0.4 miles to an existing gate and the MF-55 Road junction. Pass through the gate and travel 1.4 miles to station 0+00 where reconstruction begins.
  - 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.")  
Porter Canyon WAU – 19,789 acres.  
Sub basin 2 – 1,063 acres.
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 on the north aspect of Bowman Mountain. Approximately 32% of the ownership in the Porter Creek WAU is State DNR managed lands. Large industrial landowners own the majority of the adjacent private forest land within Porter Creek WAU. The information below refers to information taken from the State GIS, P&T, and FPARS database dated September 7, 2010.

WAU Name	Total WAU Acres	DNR Managed Forested Acres	Percent DNR Managed Forestland	Private Managed Forest Acres	Percent Private Managed Forestland
Porter Canyon WAU	19,789	6,421	32%	13,368	68%

The table below reports recent timber harvest activity on Department lands within the Porter Creek WAU during the last seven years, as well as future planned timber harvests on Department lands. The same chart also reports recent past harvesting on private lands, but no attempt was made to predict future timber harvests on private land. The attached WAU map, created in November of 2010, shows the location of Department and private harvest activity.

NAME OF WAU	DNR ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS	DNR ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS	DNR EXPECTED HARVEST ACRES WITHIN NEXT YEAR	PRIVATE ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS	PRIVATE ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS
Porter Canyon	739	0	209	231	72

The Department's Habitat Conservation Plan (HCP) outlines strategies to protect all federally listed threatened and endangered species, and species that are in danger of being listed in the future, as well as uncommon habitat types found on forest lands in western Washington. HCP prescribed riparian buffers intended to protect salmon and trout habitat were applied to this proposal and will be applied to all future sales in the vicinity. Potentially significant adverse impacts to slope stability, streams, water quality, and wildlife habitat have been mitigated. The HCP identifies large, structurally unique trees and snags as uncommon habitats that need to be retained. Specific mitigation measures are generally discussed below and in more detail in the specific sections.

**Earth:** Areas exhibiting signs of instability were removed from the proposal area; harvest area and road construction will be located on stable areas only. Contract language will prevent activities or the use of equipment that may pose high risk to soil compaction and will restrict operations during periods of wet weather when rutting or erosion may occur. The combination of harvesting schedule and recommended yarding strategies will alleviate or minimize ground disturbance. The sale area will be replanted within 2 years of harvest with Douglas-fir and western redcedar seedlings, thus minimizing potential soil erosion.

**Surface and Ground Water:** RMZ's will serve to reduce potential for mass wasting, preserve fish habitat, and maintain water quality. Temporary structures that protect stream bank integrity will be utilized when shovel/cable yarding over type 5 streams. Contract language may prevent activities or the use of equipment that may pose high risk to soil compaction and surface erosion, and will suspend operations during period of wet weather, reducing impacts to water quality. Roads will be surfaced with rock and will have adequate drainage structures to maintain natural drainage patterns.

**Wildlife:** A minimum of 8 trees per acre, including trees that are structurally unique and from the largest diameter and dominant crown classes, will be left as wildlife and green trees in the variable retention harvest area. Clumped green trees are located throughout the sale area and scattered green trees are larger diameter Douglas-fir, western redcedar, bigleaf maple, red alder and western hemlock. Harvested areas will be planted within two planting seasons following harvest. RMZ's as well as areas removed for slope stability will also contribute to the structural diversity across the proposal area.

Planned land management activities in fiscal year 2012 within the Porter Canyon WAU include road construction, RMAP activities, and silvicultural activities. The Porter Canyon WAU has future planned activities consisting of variable retention harvests of approximately 209 acres on DNR lands. These activities will continue to follow the Forest Practices Rules, Policy for Sustainable Forests, Implementation Agreement, Incidental Take Permits, and the HCP. This will ensure that all aspects of the environment are adequately protected and serve to minimize the chance of adverse cumulative environmental impacts.

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 Porter Canyon WAU is mountainous. It consists of valley bottom and steep sided mountains ranging in elevation from 600' to 4,000'. The Van Zandt Dike is the western boundary, the Clearwater drainage is the eastern boundary, the North Fork Canyon Creek drainage is the northern boundary, and the height of land between the Middle Fork Nooksack River and Hutchinson Creek defines the southern boundary. Land forms are of glacial, glacial fluvial, and fluvial origin. Most of the WAU is forested with scattered parcels of cleared private land in the valley bottoms. It is located in the Westside western hemlock vegetation zone where the major timber types are second growth conifer/hardwood (Douglas-fir, western redcedar, western hemlock and red alder). There are many young Douglas-fir stands throughout the WAU. The Middle Fork Nooksack River is the major water body found in the central portion of the WAU. The climate is typical of the foothills of the western Cascades.
- 2) *Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).*  
The proposal is located from 1,000-2,300 feet in elevation on a primarily northern aspect. The proposal area contains many of the features listed above. Information based on local knowledge, aerial photos, and field verification.

b. What is the steepest slope on the site (approximate percent slope)?  
115%

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	% Slope	Acres	Mass Wasting Potential	Erosion Potential
4791	Gravelly Loam	30-60	56	No data	No data
6771	No Data	50-90	1	No data	No data
0140	Rock Complex	60-90	7	No data	No data
0138	Gravelly Loam	60-90	1	High	High
7158	V. Gravelly Sandy Loam	30-60	1	Medium	High

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

- 1) *Surface indications:* Slight evidence of failures along inner gorges of type 4 streams.
- 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:  
Steeper hillsides to the north and northeast have had mass wasting (deep seated to the northeast) dating from deglaciation of the area. Shallow rapid slide activity occurs within the inner gorges, normally associated with storm events.
- 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:*  
Within the Porter Canyon WAU, sub basin 2, shallow failures have been historically observed on orphaned road segments in the field and in aerial photos.
- 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:
- 5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*  
Boundary and road locations have been located on stable areas only and road construction has been minimized. Roads exceeding 50% side slopes will be full bench construction with end haul, designed to minimize stream crossings, keep ground-based yarding to acceptable limits, and to access landing locations for areas requiring cable yarding. Cable yarding will achieve lead end suspension. Ground-based harvesting and yarding will generally be permitted within 400-500 feet of roads and forwarding trails. Ground-based yarding will occur where slopes are less than or equal to 25%. Ground-based falling and yarding, and road construction, and hauling may be restricted to the drier times of the year.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

#5 Ground base yarding does not separate out  
 THE EXTENT OF YARDING 2.5% is the steepest  
 slope. Does not state that SW' from #5  
 road is the max. distance. Does not address  
 protection of unstable slopes from runoff  
 associated with skid trails/roads  
 BN 5/4/11

#5 does not show protection for soil erosion since  
 The comment regarding road const. and hauling is  
 "MAY be restricted to drier times of the year"

Approx. acreage new roads: 2.1 Approx. acreage new landing: 0.2 Fill source: All fill material will be obtained from excavation activities during proposed road construction and reconstruction. This material will either be incorporated into subgrade development or sidecast on slopes less than 50%, or endhailed to stable waste area locations.

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.  
Minor erosion may occur from freshly exposed soils along road cut slopes and embankment slopes.
- 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):  
0%
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:  
(Include protection measures for minimizing compaction or rutting.)  
To control road related erosion, road pioneering will generally not extend more than 500 feet beyond completed construction, culverts will be installed concurrently with construction of the road subgrade, and culvert outlets will not terminate on unprotected soils. Road will be crowned to prevent water accumulation on road surface. Ditches will be excavated along roads to collect surface runoff, which will be discharged onto stable areas of the forest floor, or natural drainages through ditch outs and cross drain culverts. All exposed soils resulting from road construction and reconstruction will be revegetated. Roads will be crowned, ditched, and cross-drained, surfaced with rock, and constructed according to Forest Practice standards. The combination of harvesting schedule and recommended yarding strategies will alleviate or minimize erosion. Ground-based yarding, mechanized falling, road construction, and hauling of forest products may be restricted to the drier times of the year. Contract and road plan provisions restrict operations during periods of unfavorable weather during any time of the year.

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 equipment exhaust and road dust created by truck traffic.
- 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:  
None.

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: All streams within this proposal area are potential tributaries, via surface water or subsurface flow, to the middle fork of the Nooksack River.
    - 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)
Un-named Creek	4	9	100'
Un-named Creek	5	18	N/A
Clearwater Creek*	1	1	N/A
Middle Fork Nooksack	1	1	N/A

\*No RMZ established, only removing right of way trees on existing road for day-lighting purposes.

- c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.  
The type 4 streams will have 100 foot no entry RMZ's, except for the cutting of trees to create one 25-foot wide corridor for facilitating yarding operations. There will be an equipment limitation zone of 30 feet adjacent to the type 5 streams within the harvest units. Temporary log crossings that protect streambank integrity are required for type 5 water crossings during yarding operations. Trees will be felled to avoid streambank disturbance on all typed streams. Logs will have lead end suspension during cable yarding. All existing roads through RMZ's will be monitored during hauling to ensure ditchwater and road runoff will not enter or otherwise adversely affect water quality or RMZ function. Corrective action such as straw bales, silt fencing, rock-lined ditches and sediment traps will be installed or constructed if necessary.
- 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): See 3.a.1.c.  
Two type 5 crossings crossing will be constructed as part of this proposal. This work will be done per contract specifications.
- 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.  
Does not apply.
- 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: All stream flow may be temporarily diverted through bypass culverts or retained behind (or pumped around) coffer dams during culvert installations on typed streams.

h proposal measure to prevent erosion is not explicit does not address erosion: "may be restricted" still allows for work during wet soil conditions. No discussion of how Type A cover low will be managed to prevent erosion. RN 5-4-11

1. e location of cover for type 4 water  
2. Does not address yarding over type 4 water  
RN 5-4-11  
1 c no discussion of protection for erosion, slope stability in corridor for typed water protection

- 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? **Yes, there are steep slopes and incised channels in the sub-basin in the WAU that may be susceptible to mass wasting. However, there is only a minimal chance that eroded materials could enter surface waters, due to the current road construction and current harvest procedures.**
- 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 is evidence from state GIS data and aerial photos that show minor changes to the channels of some streams within the WAU, most likely during peak flow events. There are shallow failures in some of the inner gorges of streams of the sub-basin due to inadequate drainage of old roads and railroad grades and most likely associated with 10-year storm events and peak flows. Changes in channel dimensions along the courses of type 4 un-named streams indicate increased flows in the past. Type 4 streams in adjacent harvests show evidence of bank erosion and channel down cutting during seasonal storm events.**
- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?  
 No  Yes, explain: **Yarding strategies, riparian buffers, road design, and leave tree strategies will minimize any potential deliverability to typed waters. Steeper slopes with and without the potential for delivery have been evaluated for stability on a case by case basis, with slopes considered moderate or high risk removed from the proposed harvest area. Road construction, hauling, and ground-based harvesting operations may be restricted from November 1 to March 31 and may not be permitted during unfavorable weather conditions at any time of the year. Mitigation measures described here should minimize the potential affects to water quality.**
- 10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?  
 Porter Caucion WAU: 1.8 mi/mi<sup>2</sup>  
 Sub basin 2 is unknown. (DNR/GIS rpt. 9/12/10-General)  
 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: **The percentage of roads carrying water is unknown. The information below was taken from the DNR corporate WAU GIS data layer as of September 7, 2010.**
- 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. **49%**
- 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?  
**Sub Basin 2: 76%**
- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?  
 No  Yes, describe observations: **See B.3.a.8.**
- 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.  
**The proposal is not expected to add significantly to peak flow. Surface runoff may peak sooner than in adjacent stands of timber due to the removal of the over story because precipitation that normally dissipated in the tree canopy will come in contact with the under story brush and litter.**
- 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: **Diversion Dam Water Intake downhill from unit. The east most RMZ and Type 4 stream enter the Middle fork of the Nooksack at the Diversion Dam. All other streams are tributary downstream of the Diversion Dam.**
- 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.  
**This proposal will reduce the DNR owned percentage of the sub basin that is hydrologically mature. Forest lands that are hydrologically mature minimize impacts of rain on snow events. As directed by Procedure 14-004-060, "Assessing Hydrologic Maturity", hydrologic maturity will be managed for in this sub-basin. In sub-basin 2, 76% of sub-basin is rain on snow and snow dominated zone, DNR State ownership owns less than 50% of total rain on snow, therefore procedure does not apply.**

The potential for stream flow increases are tempered by the design of the proposed sale. The type 4 streams have been excluded from the timber sale. Type 5 streams are not expected to contribute to stream water quality degradation during or after harvest operations. Road construction, harvesting operations, and haul may be restricted during unfavorable precipitation conditions further reducing impact to water quality.

Road construction standards emphasize maintaining current drainage patterns without moving water into different drainages. All newly constructed road will be abandoned before contract expiration. The Department will continue to space harvests spatially and temporally allowing vegetative green up to absorb precipitation impacts.

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.  
**Road cross drains capturing shallow surface water and rain and snow melt may increase ground water recharge directly below culvert outlets. This will increase surface saturation in localized areas, but it is not expected to significantly increase or decrease ground water.**
- 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 and lubricates could be inadvertently spilled as a result of heavy equipment use. No lubricants will be disposed on site.**
- 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: See B.3.a.15.
  - a) *Note protection measures, if any.*  
**Road locations were selected to minimize ground water interception. Number and spacing of culverts are designed to minimize quantity of water discharged in any one location.**

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.  
**The source of water runoff is rain and snow melt which results in overland, stream, and groundwater flow (intercepted from road cut banks). This groundwater will be discharged onto stable areas of the forest floor or into natural drainages via road ditches, cross drains or ditch-outs. See also B.3.a.1.a.**
- 2) Could waste materials enter ground or surface waters? If so, generally describe.  
**See B.3.b.2.**  
**Erosion and mass wasting are unlikely, provided appropriate forest practices outlined in the timber sale contract are used during road construction and timber harvesting near all waters.**
  - a) *Note protection measures, if any.*  
**Road building, hauling, and ground-based operations may be restricted during the wet season. Crowned and rock surfacing on all roads will reduce sediments from entering natural waters. Installation and maintenance of roadside ditches and cross-drain culverts will conform to the timber sale contract road plan specifications. Timber will be felled to avoid stream bank height disturbance on all typed streams. Temporary log crossings that protect stream bank integrity are required for Type 5 water crossings during yarding operations. There will be an equipment limitation zone of 30 feet to the Type 5 streams within the harvest units.**

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.)

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:  
 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:  
 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.)

**Second-growth conifer and hardwoods will be removed as described in A.11.a. Some snags and immature trees may be left unless they need to be felled for safety or operational reasons. Associated under story vegetation will be disturbed by logging or road building activities within the sale boundary. The current stand will be replaced with a managed Douglas-fir and western redcedar stand (hand planted), along with naturally regenerated western hemlock, red alder, and bigleaf maple. This managed regenerated stand will retain snags and dominant, co-dominant, and/or structurally unique trees from the current stand, increasing horizontal and vertical diversity over the landscape.**

- 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.")*  
**The entire unit is surrounded by DNR ownership. The unit is bordered by mature mixed conifer forests to the south and north. To the west, the unit is bordered by mature mixed conifer forests broken up by a short distance of 10-year Douglas-fir plantation. To the east the unit is bordered by a managed 30-year-old Douglas-fir stand.**

2) *Retention tree plan:*

Retention trees, including trees from the dominant crown class and largest diameter class will be left as wildlife and green trees. Retention trees will be clumped (67%) and scattered (33%), averaging 8 trees per acre, throughout the harvest area in order to ensure desired spatial distribution. Green trees will be retained to preserve structural diversity for wildlife habitat and include structurally unique, wind firm trees from diameter classes averaging between 20-28 inches DBH. Trees from dominant and co-dominant crown classes provide some components of multi-layered canopy. A larger green tree clump has been utilized in order to retain trees adjacent to a high number of biologically valued snags. All snags (unless they need to be felled due to L&I safety considerations) are to be left.

- c. List threatened or endangered *plant* species known to be on or near the site.  
The DNR TRAX indicates no known threatened or endangered plant species.
- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: (See above 4.b.2). Native conifer species of similar site stock planted at 360-400 trees per acre will be planted throughout the proposal area upon completion of the harvest. Naturally regenerated western hemlock and red alder will also be managed with planted conifers. Large, tall snags are present in the unit and have been provided with L&I buffers in four leave tree patches.

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:  
mammals: deer, bear, elk, beaver, other:  
fish: bass, salmon, trout, herring, shellfish, other:  
unique habitats: talus slopes, caves, cliffs, oak woodlands, balds, mineral springs  
amphibians: western toad – 3 toadlets observed during biologist field review on 10/7/10.

- b. List any threatened or endangered species known to be on or near the site (include federal- and state-listed species).  
The DNR TRAX indicates no known threatened or endangered animal species.

- c. Is the site part of a migration route? If so, explain.  
Pacific flyway Other migration route: Explain if any boxes checked:  
Washington State is considered part of the Pacific flyway. No impacts are expected.

- d. Proposed measures to preserve or enhance wildlife, if any:  
Riparian Management Zones and native conifer trees will serve as habitat for several bird and wildlife species.

- 1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.  
None.  
See 4.b.2 Above

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.  
There is minimal hazard for all of the above due to heavy equipment operations. There is a potential fire hazard if operating in moderate fire weather conditions during the summer until slash has broken down. The timber sale contract contains language that addresses hazardous materials spill prevention; hazardous material spill containment, control and cleanup; hazardous material release reporting.

- 1) Describe special emergency services that might be required.  
During harvest operations there may be a short term need for: Department of Ecology approved contract Haz-Mat cleanup crews, Rural fire district crews, DNR forest fire response crews and Rural Fire District EMT's and Paramedics for responding to accidents or forest fires.

- 2) Proposed measures to reduce or control environmental health hazards, if any:  
See: Contract enforcement of forest fire protection rules.

- b. **Noise**

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?  
Noise from trucks and logging equipment will be present while operating during daylight hours.
- 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.  
There will be noise during daylight hours on a short-term basis from heavy equipment, log trucks, and chain saws during road construction and logging.

- 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 owned commercial forestry land and private forestry lands surround the proposal area.**
- 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?  
**Commercial forestry.**
- f. What is the current comprehensive plan designation of the site?  
**Commercial forestry and resource protection.**
- 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 an "environmentally sensitive" area? If so, specify.  
**Does not apply.**
- i. Approximately how many people would reside or work in the completed project?  
**Does not apply.**
- j. Approximately how many people would the completed project displace?  
**Does not apply.**
- k. Proposed measures to avoid or reduce displacement impacts, if any:  
**Does not apply.**
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:  
**The design of this project is consistent with current comprehensive plans and zoning regulations.**

**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 principle exterior building material(s) proposed?  
**Does not apply.**
- b. What views in the immediate vicinity would be altered or obstructed?
- 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?*  
**Does not apply.**
- c. Proposed measures to reduce or control aesthetic impacts, if any:  
**Potential aesthetic impacts from timber harvesting are blended by RMZ's, scattered leave trees, and leave tree areas located throughout the sale area. Replanting with Douglas-fir and western redcedar at 360-400 stems/acre within two years after harvest will also help to reduce negative aesthetic impacts.**

**11. Light and Glare**

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?  
**Does not apply.**
- b. Could light or glare from the finished project be a safety hazard or interfere with views?  
**Does not apply.**
- c. What existing off-site sources of light or glare may affect your proposal?  
**Does not apply.**

- 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?  
**Hunting, hiking, mushroom gathering, berry picking, and horseback riding.**
- b. Would the proposed project displace any existing recreational uses? If so, describe:  
**The proposal area will be closed to the public 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:  
None.

**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.  
**The Nooksack Tribe has identified the Middle Fork Nooksack River drainage as an area of traditional cultural use. It is identified on the state historic register (Office of Historic and Archaeological Preservation) as a traditional cultural property.**
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.  
None known.
- c. Proposed measures to reduce or control impacts, if any:  
*(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)*  
**DNR representatives have met with the Nooksack Tribe with the objective of agreeing to a plan for mitigating cultural values. This proposal has been reviewed for cultural resources. An annual meeting was held at which maps of the proposal were distributed to tribal members from the Lummi Nation and the Nooksack Tribe for review. A follow up letter and map were sent to both tribes. As of the date of this document, no specific information that can be addressed within or near the proposal area has been observed on the ground or provided by either tribe. A precursory review of DNR's TRAX (Total Resource Access System) identified previous surveys or other cultural or historic information within one-mile radius of the proposal area. Any additional cultural resources identified during operations will be protected. Should archaeological materials or human remains be discovered during the course of operations, all work in the vicinity will be stopped and associated tribes and Office of Archaeological and Historic Preservation (OAHP) will be contacted.**

**14. Transportation**

- a. a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any. See A.12.b.
- 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?  
**Does not apply.**
- c. How many parking spaces would the completed project have? How many would the project eliminate?  
**Does not apply.**
- 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).  
**Does not apply.**
- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*  
**There will be increased truck traffic for rock hauling during road construction and timber hauling during the timber harvest period.**
- 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.  
**An average of 10-15 roundtrip truck loads each day during road construction and harvest operation. Peak volumes will be during logging activities.**
- g. Proposed measures to reduce or control transportation impacts, if any:  
**Safe operation of vehicles will be encouraged.**

**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.  
See 7.a.1.
- b. Proposed measures to reduce or control direct impacts on public services, if any.  
**Restrict access during periods of extreme fire hazard. Operations will cease during periods of extremely low humidity (less than 30%).**

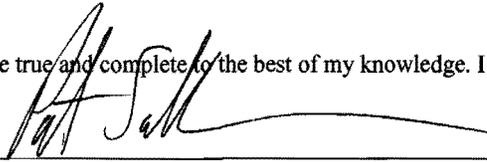
16. **Utilities**

- a. Circle 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.

Completed by: \_\_\_\_\_



Forester I

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

2/16/11

Title