

# **Wetland Delineation Report**

for

## **Silver Lake Forest Reserve Cowlitz County, Washington**

*Prepared for:*

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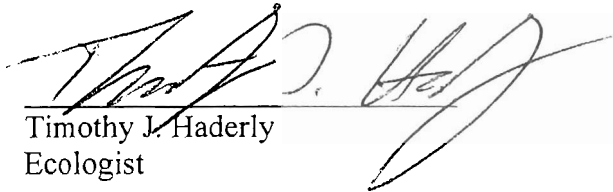
*Prepared by:*

Ecological Land Services, Inc.  
1157 3<sup>rd</sup> Avenue, Suite 220  
Longview, WA 98632  
360-578-1371

March 10, 2006

## SIGNATURE PAGE

The information and data in this report were compiled and prepared under the supervision and direction of the undersigned.



Timothy J. Haderly  
Ecologist

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- Figure 2 Site Map
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- Figure 3 Soil Survey Map
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### Routine Onsite Wetland Determination Data Forms

### Wetland Rating Forms for Western Washington

## **INTRODUCTION**

Ecological Land Services, Inc. (ELS) completed a wetland determination on a 350-acre site (parcel numbers WG3604001, EF3103001, EF3104002, and EE602004). The site is generally bordered by Hansen Road to the north, Sightly Road to the east, Outlet Creek to the west and backwaters of Silver Lake to the south near Toutle, Washington (see Figure 1). The property is owned by Weyerhaeuser Real Estate Development Company and located in Section 36, Township 10 North, Range 1 West; Section 31, Township 10 North, Range 1 East; and Section 6, Township 9 North, Range 1 East of the Willamette Meridian. This report summarizes the findings of the wetland determination according to *Cowlitz County Code (CCC), Chapter 19.15 - Critical Areas*.

The applicant has legally created 49 lots through a Record of Survey and has applied to construct a Private Roadway. The site will include improvements of existing roads, using the County's Private Road standards, and extension of buried electric/telephone. Primary access will be from Sightly Road, and secondary access from Hansen Road.

A wetland reconnaissance was initially prepared where wetland areas were mapped using soil and aerial mapping by Pacific Habitat Technologies in 2005 with subsequent verification and delineation by ELS in early 2006. Bluhm and Associates Land Surveyors, Inc. provided a surveyed site boundary map including property corners, property lines, road alignments, and road topography.

## **METHODS**

The wetland delineation completed by ELS followed the Routine Determination Method for delineating wetlands according to the U.S. Army Corps of Engineers, *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the Washington State Department of Ecology, *Washington State Wetlands Identification and Delineation Manual* (2004).

The Routine Determination Method examines three parameters—vegetation, hydrology, and soils—to determine if wetlands exist in a given area. Hydrology is critical in determining what is wetland but is often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as “Waters of the United States” by the U.S. Army Corps of Engineers (USACE), “Waters of the State” by Washington Department of Ecology, and locally by Cowlitz County.

Vegetation, hydrology, and soil data were collected from test plots to verify the presence or absence of wetlands (see wetland data sheets). Wetland boundaries located in the field with the majority of each boundary flagged with surveyors flagging. Boundaries were mapped using a

portable GPS unit and placed on the base map provided by Bluhm and Associates, Inc.. The estimated error of mapped wetland boundaries is approximately 10 feet horizontal.

## **SITE DESCRIPTION**

The site consists primarily of upland, forested areas and has been re-planted with Douglas fir. Most of site has been previously logged in the past 6-8 years (1998-2000) with the exception of the forested wetlands and buffers along the backwaters of Silver Lake (see copies of FPAs).

## **VEGETATION**

Dominant wetland and upland vegetation at the subject site is listed in the attached data forms.

The indicator status following the common and scientific names indicates how likely a species is to be found in wetlands. Listed from most-likely to least-likely to be found in wetlands, the categories are:

- **OBL** (obligate wetland) - occur almost always (estimated probability >99%) under natural conditions in wetlands.
- **FACW** (facultative wetland) - usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
- **FACU** (facultative upland) - usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).
- **UPL** (obligate upland) - occur almost always (estimated probability >99%) under natural conditions in non-wetlands.
- **NI** (no indicator) - insufficient data to assign to an indicator category.
- A positive (+) or negative (-) sign, when used with indicators, attempts to more-specifically define the frequency of occurrence in wetlands. The positive sign indicates "slightly-more frequently found in wetlands: and the negative sign indicates "slightly-less frequently found in wetlands."

## **SOILS**

Mapped soils on the property are shown in Figure 3 (NRCS 2006) and are summarized in the following table.

<b>Number</b>	<b>Soil Series</b>	<b>Drainage</b>	<b>Hydric Soil</b>
76	Hazeldell gravelly silt loam, 8-20% slopes	Well Drained	Not Hydric
77	Hazeldell gravelly silt loam, 20-30% slopes	Well Drained	Not Hydric
124	Mart silt loam, 8-20% slopes	Poorly Drained	<i>Hydric</i>
134	Natal Silty clay loam, 0-4% slopes	Poorly Drained	<i>Hydric</i>
146	Olympic silt loam, 2-8% slopes	Well Drained	Not Hydric
193	Sequest silt loam, 8-20% slopes	Well Drained	Not Hydric
194	Sequest silt loam, 20-30% slopes	Well Drained	Not Hydric
199	Snohomish silty clay loam, 0-1% slopes	Poorly Drained	<i>Hydric</i>

Mapped hydric soils do not necessarily mean that the area is a wetland; hydrology and wetland vegetation must be present to classify an area as a wetland. The same is true for soils that are not mapped as hydric. Wetlands can be found in areas with soils not mapped as hydric.

## **HYDROLOGY**

Hydrology in Wetland A is directly associated with the backwaters of Silver Lake, which is controlled by an overflow structure located immediately west of the subject site. The overflow structure (dam) maintains the water level in Silver Lake at approximately 486 msl. Wetlands B and C are within drainage swales with seasonally-flowing surface water. Wetlands D, E, and F are small closed depressional wetlands with no discernable surface water inlet or outlet.

The Washington Department of Natural Resources (WDNR 2006) stream mapping indicates five Type N (seasonal, non-fish) streams located in the northwest corner, west side, central portion and southeast corner of the subject site. Field observations indicate that these streams are more accurately classified as wetlands.

## **NATIONAL WETLAND INVENTORY**

The National Wetlands Inventory Map (NWI) shows the mapped wetlands near the subject site (see Figure 4). It shows Palustrine wetlands along Silver Lake in the southwest and south-central portions of the site in the same general location as Wetland A. Wetlands B, C, D, E and F are not shown on the NWI map. As a cautionary note, the National Wetlands Inventory map should be used with discretion because they are used to gather general wetland information about a regional area and therefore are limited in accuracy for smaller sites because of their large scale.

## **CONCLUSIONS**

### **Wetlands**

ELS located six wetlands (Wetlands A, B, C, D, E and F) within the boundaries of the subject site (see Figure 2). Approximate wetland acreages are included in the summary table below.

### **Wetland Classification**

CCC 19.15.120 classifies wetlands as Classification 1 (highest quality) through Classification 4b (lowest quality). The *Washington State Wetland Rating System for Western Washington*, Washington State Department of Ecology, 2004 (see attached rating form) is commonly used to rate wetlands in Western Washington. Wetlands are rated from Category I (highest quality) to Category IV (lowest quality) using the State of Washington method. CCC 19.15 does not use this method to rate wetlands; however, the State rating method closely resembles the County method and is used here for informational purposes.

## Wetland Classification Summary

Wetland	Cowlitz County Method <sup>a</sup>	Washington State Method <sup>b</sup>
<b>A</b>	1	I
<b>B</b>	3	III
<b>C</b>	3	III
<b>D</b>	4a	III
<b>E</b>	4a	III
<b>F</b>	4a	III

<sup>a</sup> Cowlitz County wetland classification method *CCC 19.15120A*.

<sup>b</sup> Western Washington wetland classification method 2004.

### Wetland Buffers

Wetlands D, E and F are not regulated by Cowlitz County, because they do not meet the minimum size requirements for Classification 4b wetland (2 acre minimum). *Cowlitz County Critical Area Wetlands Ordinance* only addresses buffers for wetlands with mapped soils that are listed in Table 1 of the ordinance. Wetland B consists of Seaquest soils, which are not listed in Table 1; therefore, buffers are not required by Cowlitz County.

Buffers are required for Wetlands A and C. Wetland A has Snohomish silty clay loam soils, which requires an 80-foot buffer, and Wetland C has Natal silty clay loam soils, which requires a 60-foot buffer.

### Streams

Four unnamed tributaries occur within property boundaries. Onsite reaches of these streams are mapped by WDNR as Type N streams (formerly Type 4 and Type 5 streams). Outlet Creek is located west of the property and is a Type S stream (formerly Type 1). It appears that the mapped streams are located within delineated wetland areas so they are protected under current Cowlitz County code.

## Summary Table

Wetland	Area (approximate acres)	Classification (Cowlitz Co. Method)	Mapped Soil	Buffer Required (feet)
<b>A</b>	> 20	1	Snohomish silty clay loam	80
<b>B</b>	> 1	3	Seaquest silt loam	None (60' added for mitigation)
<b>C</b>	> 1	3	Natal silty clay loam	60
<b>D</b>	< 1	4b	<i>(Wetland is not regulated)</i>	None
<b>E</b>	< 1	4b	<i>(Wetland is not regulated)</i>	None
<b>F</b>	< 1	4b	<i>(Wetland is not regulated)</i>	None

### **Permitting Considerations**

It is anticipated that the proposed Private Roadway could be completed without any new impact to wetlands. The existing road system appears to provide adequate access to the proposed lots and can be improved to County road standards without impacting wetlands. The additional new 60' wide buffer for Wetland Area "B" will adequately mitigate the proposed road widening.

### **LIMITATIONS**

*We base the above listed determinations and conclusions on standard scientific methodology and best professional judgment. In our opinion, the conclusions should agree with local, state, and federal regulatory agencies. However, this report should be considered a preliminary jurisdictional determination and used at your own risk until it has been reviewed and approved in writing by the appropriate regulatory agencies.*



## **REFERENCES**

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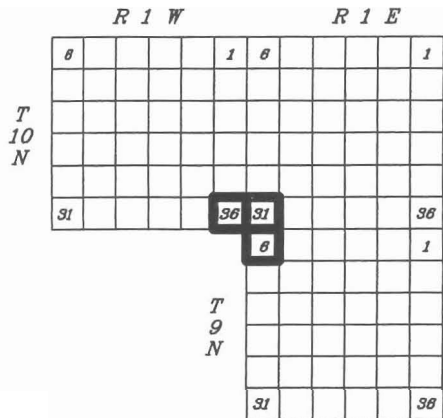
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- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Waterways Experiment Station, Vicksburg, Mississippi.
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- Washington Department of Natural Resources. 2006. *Stream Typing Map*. Web site accessed February 22, 2006. <http://www.dnr.wa.gov/forestpractices/watertyping/>

WASHINGTON



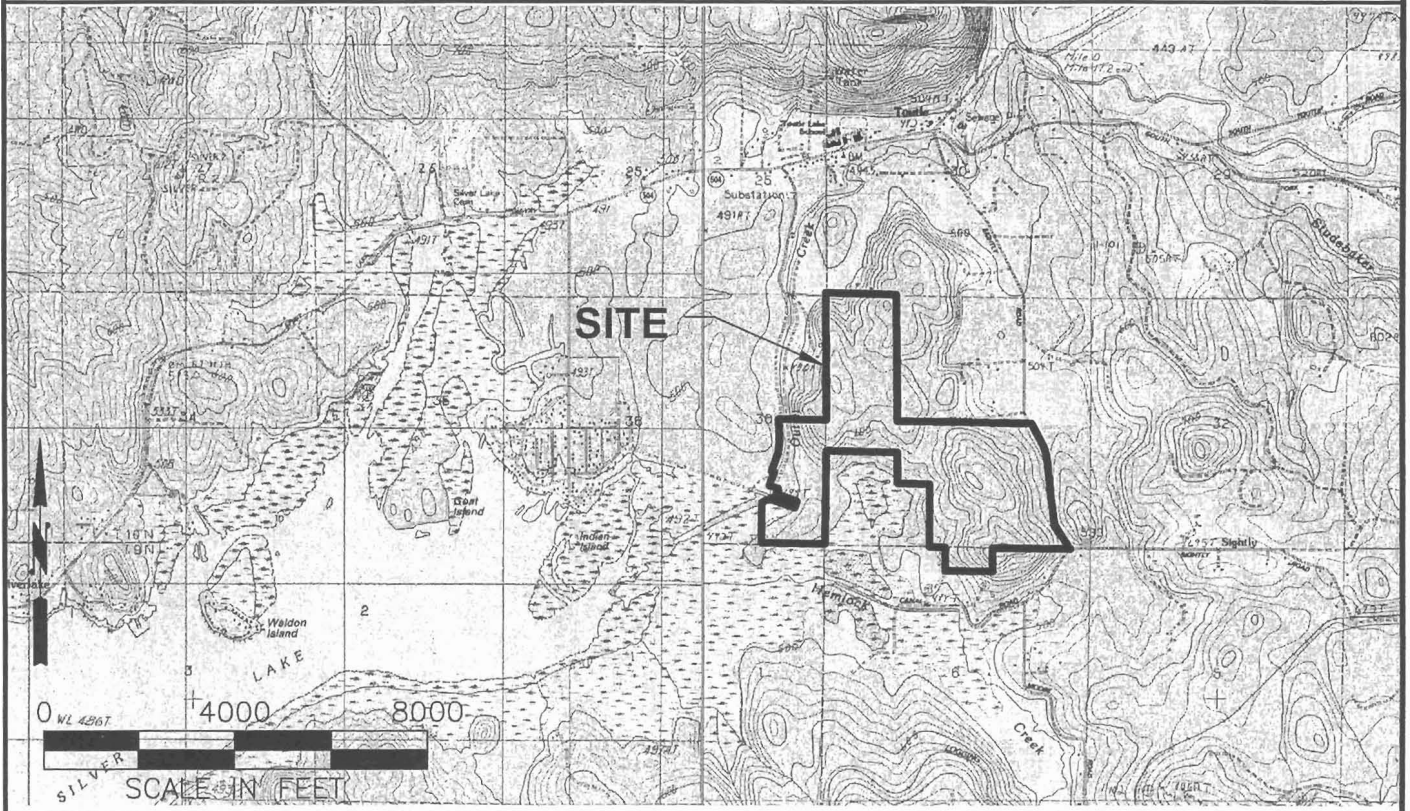
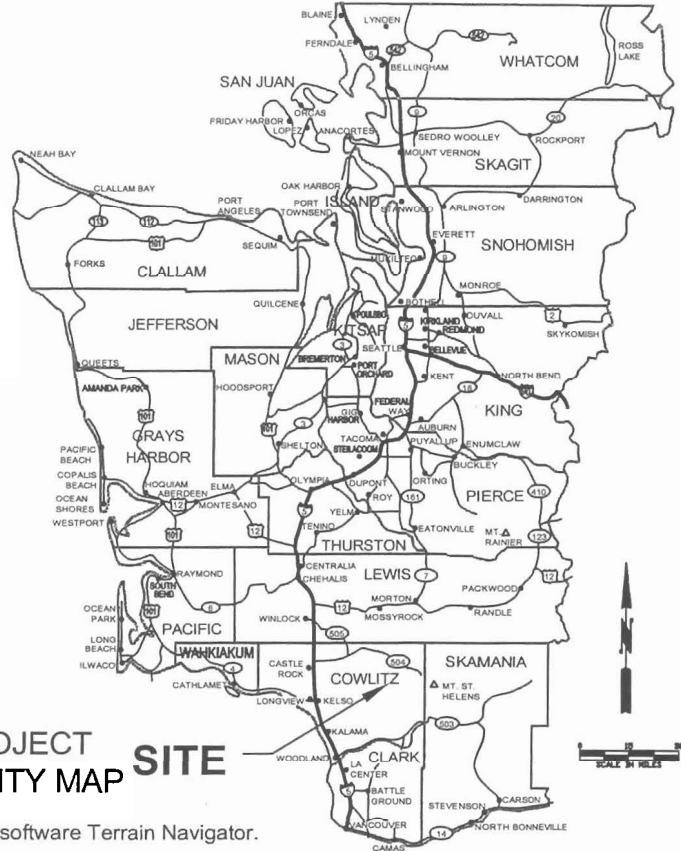
46° 11' 20" N Latitude  
123° 2' 35" W Longitude

LOCATION MAP



NOTE:

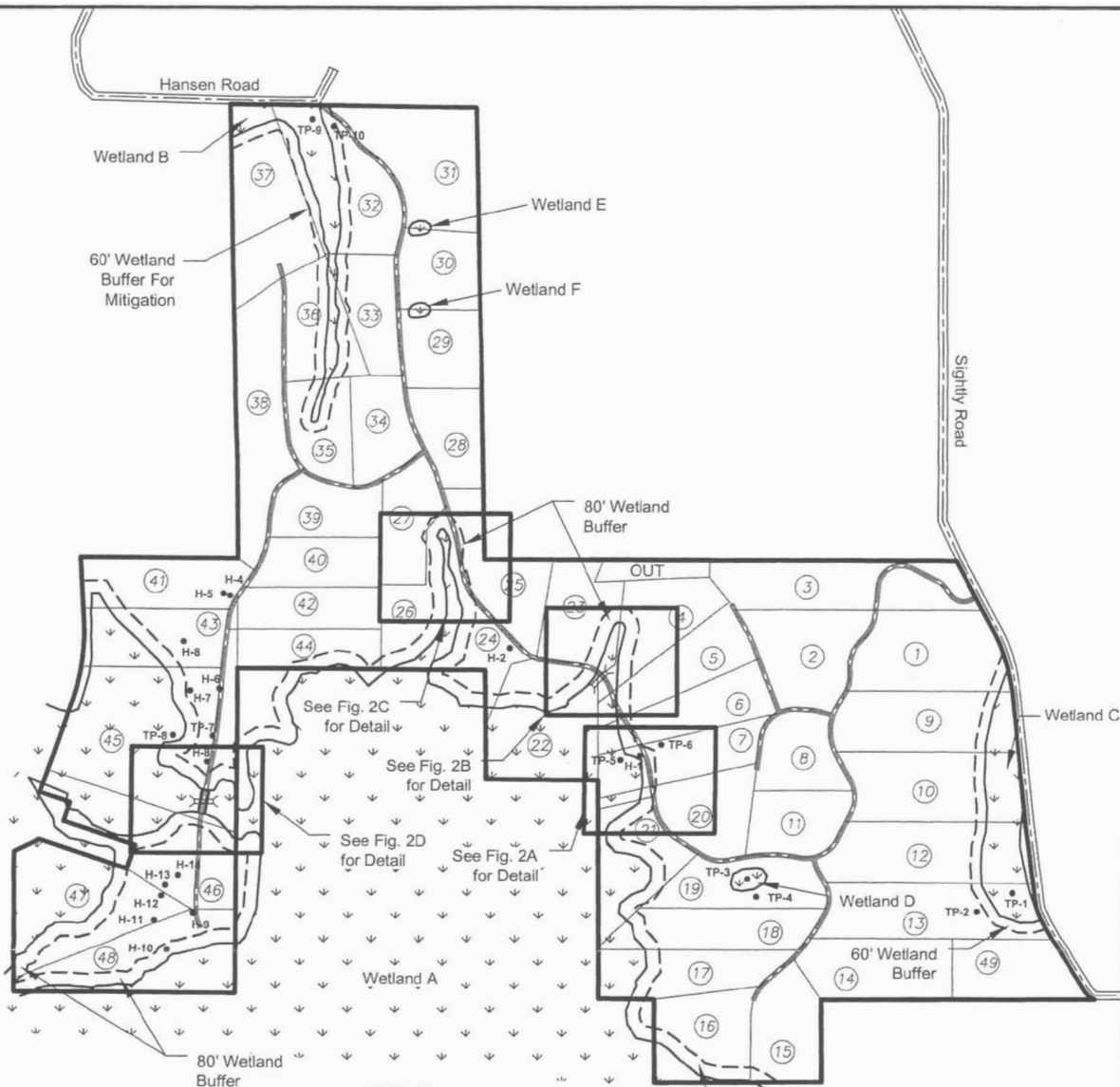
USGS topographic quadrangle map reproduced using MAPTECH, Inc. software Terrain Navigator.



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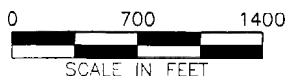
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DWN. APF  
APPR. \_\_\_\_\_  
PROJ. # 684.02

Figure 1  
VICINITY MAP  
Silver Lake Forest Reserve  
Weyerhaeuser Real Estate Development Co.  
Cowlitz County, Washington  
Sec 36, T10N, R1W, Sec 31, T10N, R1E,  
& Sec 6, T9N, R1E, W.M.



**LEGEND:**

- Site Boundary
- Wetland Boundary (Approximate)
- Wetland Buffer (Approximate)
- Proposed Lot Boundary (Approximate)
- Existing Road
- Existing Road Centerline
- H-10 • Soil Test Plot Location
- TP-1 • Wetland Delineation Test Plot Location
- Existing Culvert



**NOTE:**

1. Base map provided by Bluhm & Associates Surveying, Inc., February, 2006.
2. Wetland boundaries delineated by ELS, Inc., using GPS points collected in the field, and Pacific Habitat Technologies. Wetlands were not professionally surveyed.
3. Lot boundaries are approximate.

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Figure 2  
**SITE MAP**  
 Silver Lake Forest Reserve  
 Weyerhaeuser Real Estate Development Co.  
 Cowlitz County, Washington  
 Sec 36, T10N, R1W, Sec 31, T10N, R1E, & Sec 6, T9N, R1E, W.M.

**LEGEND:**

Wetland



Existing Road



Road Improvement  
Alignment (Extents)



Proposed Road ROW



Existing Road

Proposed  
Road Improvement



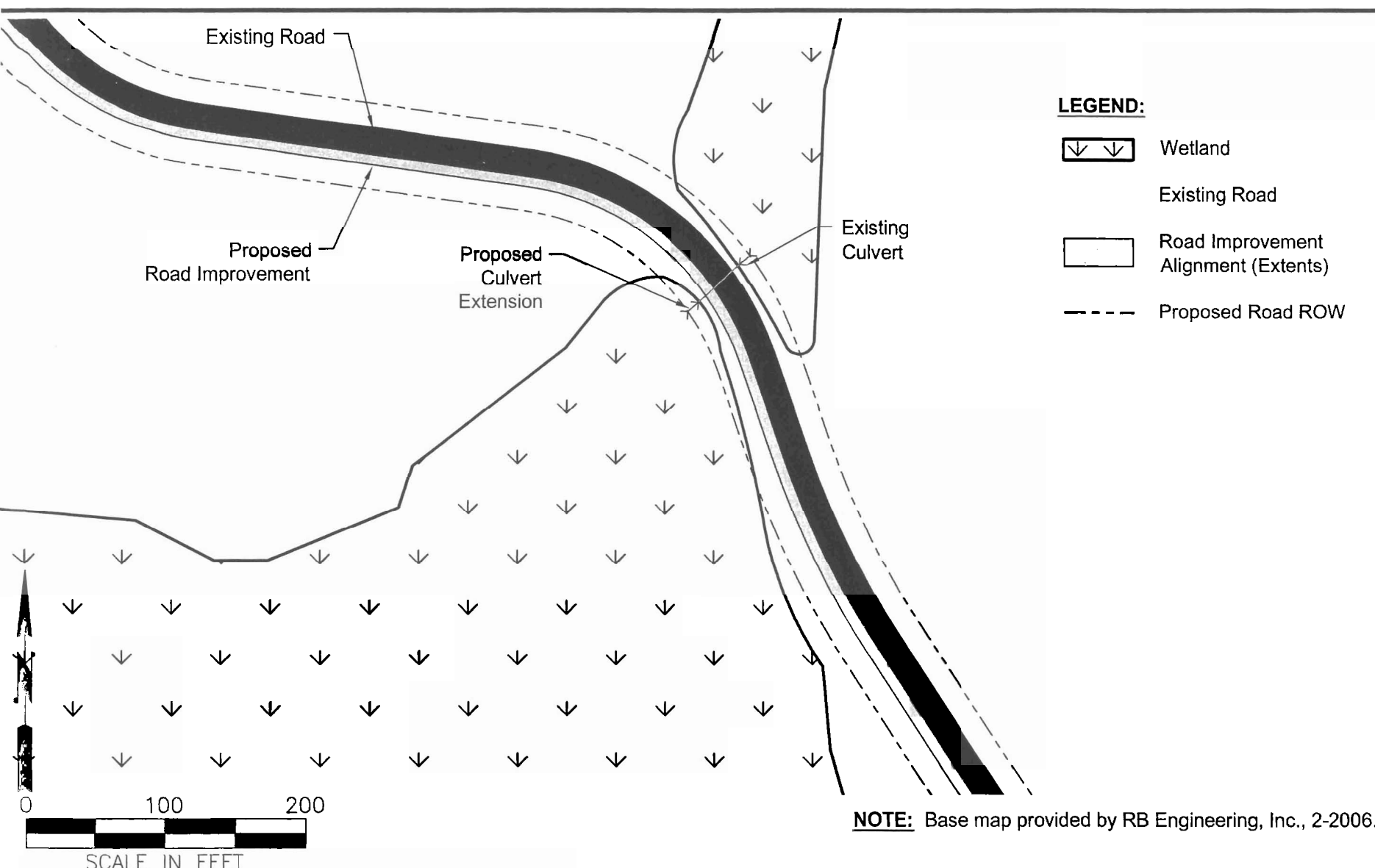
SCALE IN FEET

**NOTE:** Base map provided by RB Engineering, Inc., 2-2006.





DATE	03-10-06
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Figure 2A  
**WETLAND DETAIL - A**  
Silver Lake Forest Reserve  
Weyerhaeuser Real Estate Development Co.  
Cowlitz County, Washington  
Sec 36, T10N, R1W, Sec 31, T10N, R1E,



**LEGEND:**

-  Wetland
-  Existing Road
-  Road Improvement Alignment (Extents)
-  Proposed Road ROW

**NOTE:** Base map provided by RB Engineering, Inc., 2-2006.

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Figure 2B  
 WETLAND DETAIL B  
 Silver Lake Forest Reserve  
 Weyerhaeuser Real Estate Development Co.  
 Cowlitz County, Washington  
 Sec 36, T10N, R1W, Sec 31, T10N, R1E,

Proposed Road Improvement

Existing Road

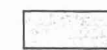
**LEGEND:**



Wetland



Existing Road



Road Improvement Alignment (Extents)



Proposed Road ROW



SCALE IN FEET

**NOTE:** Base map provided by RB Engineering, Inc., 2-2006.



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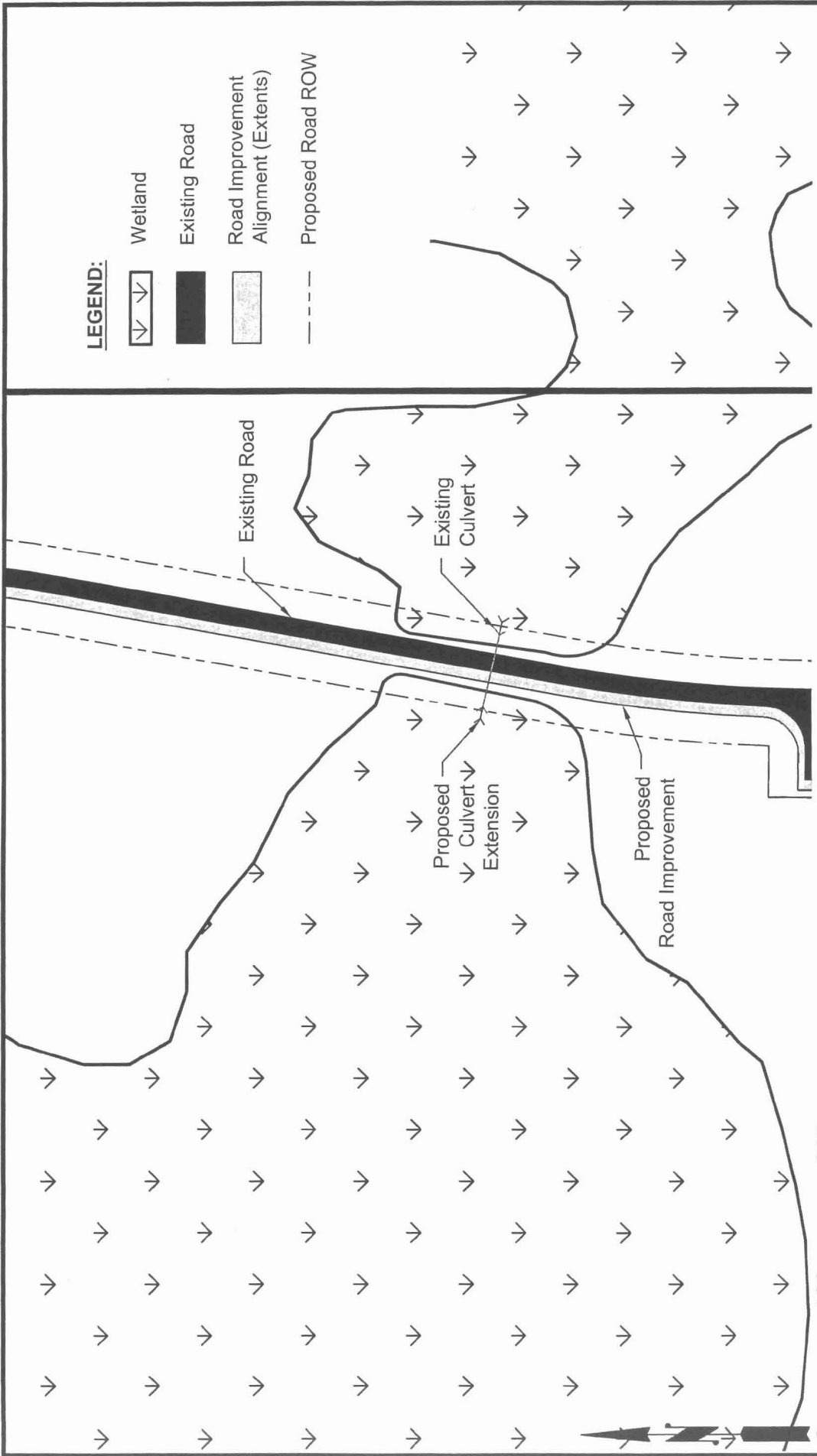
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Figure 2C  
WETLAND DETAIL C  
Silver Lake Forest Reserve  
Weyerhaeuser Real Estate Development Co.  
Cowlitz County, Washington  
Sec 36, T10N, R1W, Sec 31, T10N, R1E,




**LEGEND:**

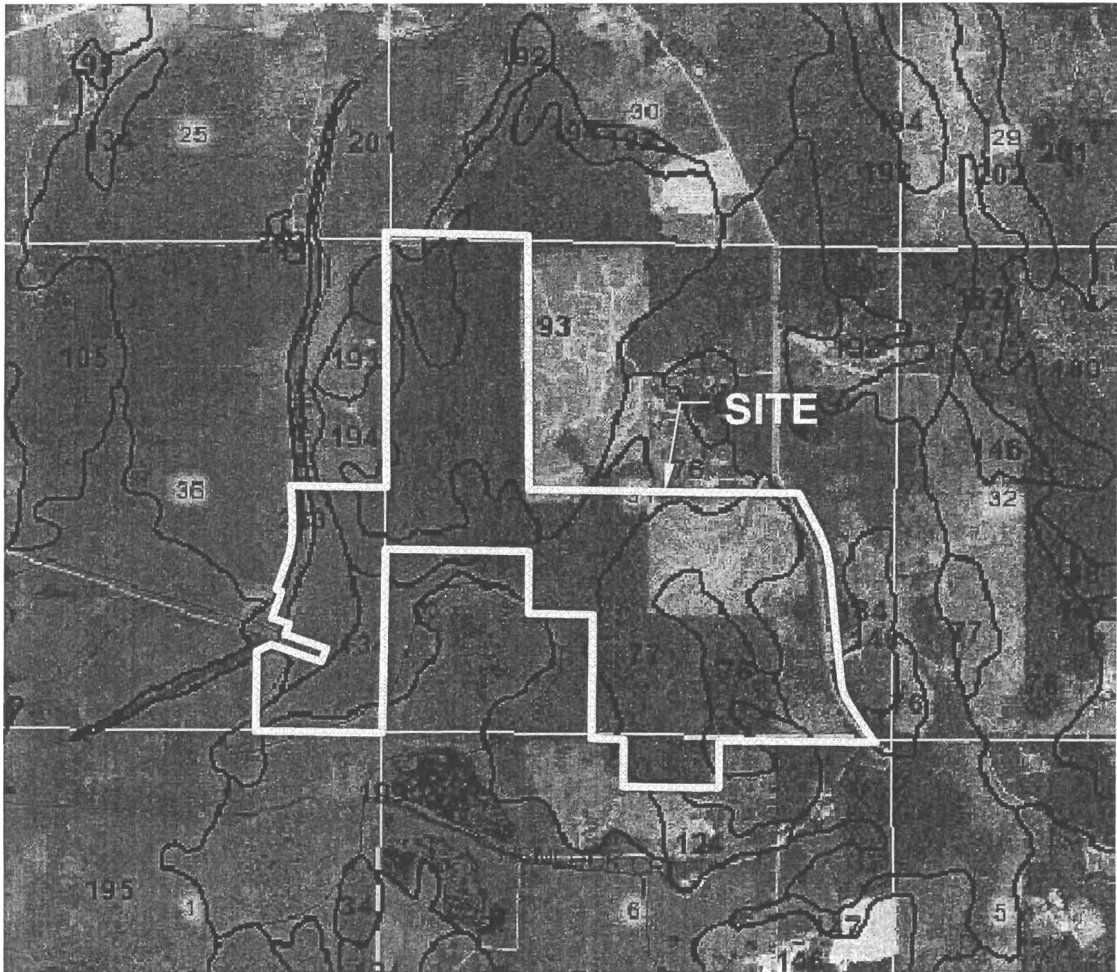
-  Wetland
-  Existing Road
-  Road Improvement Alignment (Extents)
-  Proposed Road ROW

**NOTE:** Base map provided by RB Engineering, Inc., 2-2006.

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**Figure 2D**  
**WETLAND DETAIL D**  
 Silver Lake Forest Reserve  
 Weyerhaeuser Real Estate Development Co.  
 Cowlitz County, Washington  
 Sec 36, T10N, R1W, Sec 31, T10N, R1E,



- 76 - Hazeldell gravelly silt loam, 0-8% slopes. Non-hydric.
- 77 - Hazeldell gravelly silt loam, 20-30% slopes. Non-hydric.
- 124 - Mart silt loam, 8-24% slopes. Non-hydric.
- 134 - Natal silty clay loam, 0-4% slopes. Hydric.
- 146 - Olympic silt loam, 2-8% slopes. Non-hydric.
- 193 - Seaquest silt loam, 8-20% slopes. Non-hydric.
- 194 - Seaquest silt loam, 20-30% slopes. Non-hydric.
- 199 - Snohomish silty clay loam, 0-1% slopes. Hydric.
- 263 - Water.



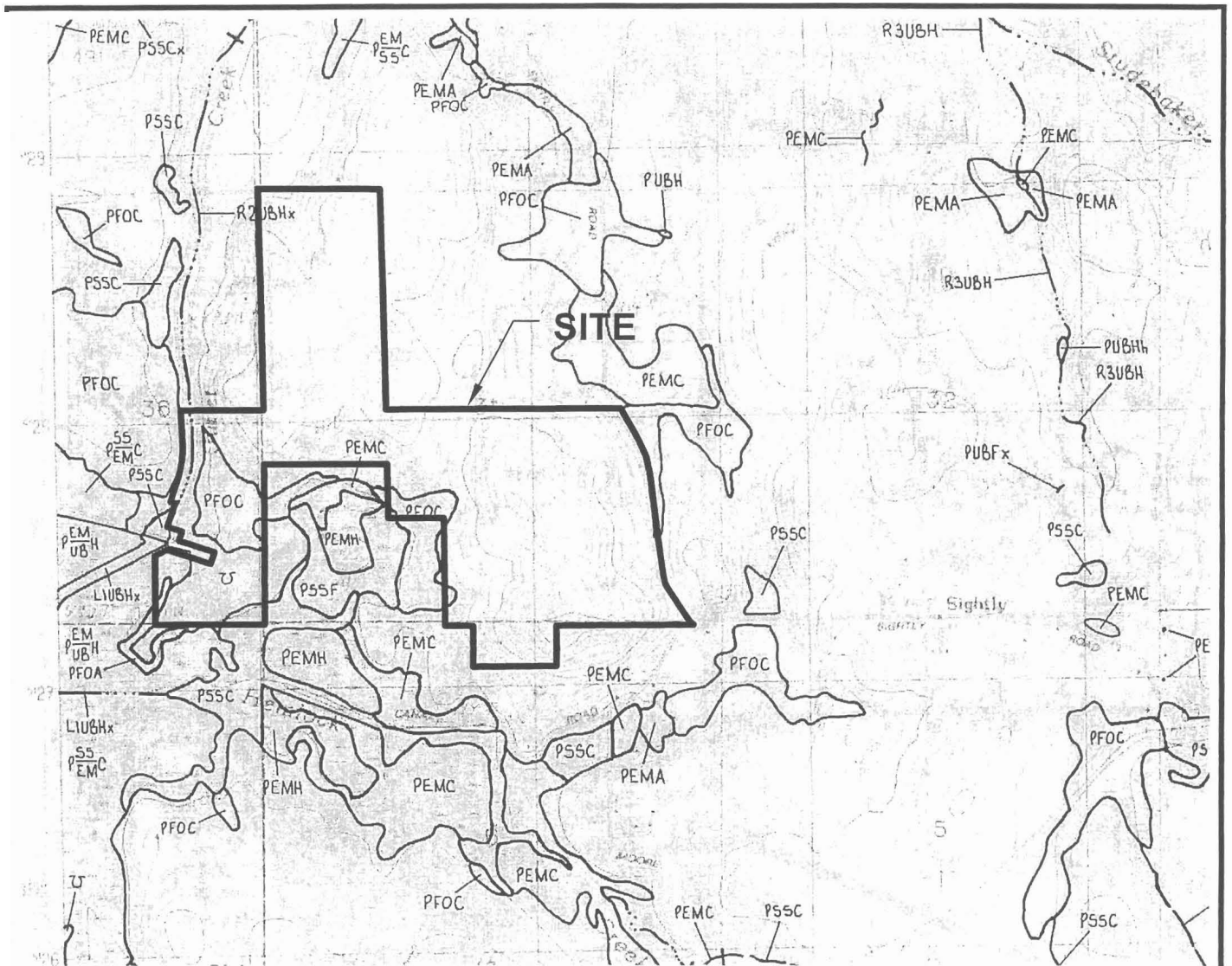
**NOTE:** Map provided on-line by NRCS at [www.or.nrcs.usda.gov/pnw\\_soil/wa\\_reports.html](http://www.or.nrcs.usda.gov/pnw_soil/wa_reports.html)

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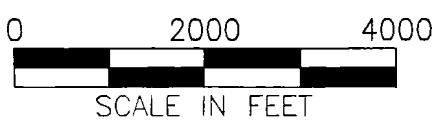
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PROJ. # 684.02

Figure 3  
SOIL SURVEY  
Silver Lake Forest Reserve  
Weyerhaeuser Real Estate Development Co.  
Cowlitz County, Washington  
Sec 36, T10N, R1W, Sec 31, T10N, R1E,  
& Sec 6, T9N, R1E, W.M.





- PEMC - Palustrine, emergent, seasonally flooded.
- PEMH - Palustrine, emergent, permanently flooded.
- <sup>EM</sup>/<sub>UB</sub>PEMH - Palustrine, emergent/unconsolidated bottom, permanently flooded.
- PFOA - Palustrine, forested, temporarily flooded.
- PFOC - Palustrine, forested, seasonally flooded.
- PSSC - Palustrine, scrub-shrub, seasonally flooded.
- <sup>SS</sup>/<sub>EM</sub>PSSC - Palustrine, scrub-shrub/emergent, seasonally flooded.
- PSSF - Palustrine, scrub-shrub, semipermanently flooded.
- RUBHx - Riverine, unconsolidated bottom, permanently flooded, excavated.
- U - Uplands

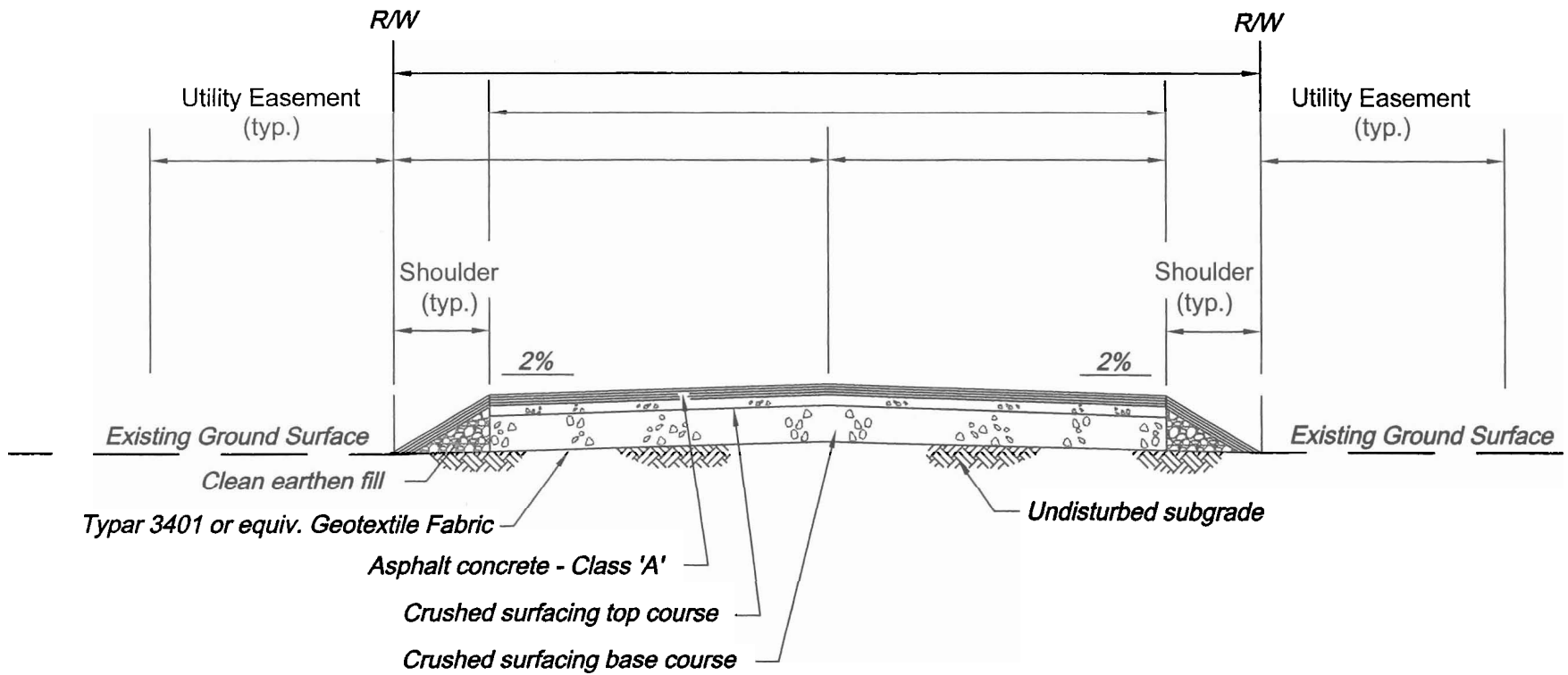


**NOTE:** Map prepared by the National Wetlands Inventory, US Department of Interior, Fish & Wildlife Service, Toutle Quadrangle, 1987.

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Figure 4  
 NATIONAL WETLANDS INVENTORY MAP  
 Silver Lake Forest Reserve  
 Weyerhaeuser Real Estate Development Co.  
 Cowlitz County, Washington  
 Sec 36, T10N, R1W, Sec 31, T10N, R1E,  
 & Sec 6, T9N, R1E, W.M.



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Figure 5  
**ROAD TYPICAL**  
 Silver Lake Forest Reserve  
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 Cowlitz County, Washington  
 Sec 36, T10N, R1W, Sec 31, T10N, R1E,



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DATA FORM – Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

<b>Project Site:</b> Silver Lake Forest Reserve	<b>Date:</b> 2/23/06	<b>Project #:</b> 684.02
<b>Applicant/Owner:</b> Weyerhaeuser Real Estate Development Company	<b>County/State:</b> Cowlitz County, Washington	
<b>Test Plot Location:</b> West of Slightly Road within Wetland C's south end	<b>Sec/Town/Range:</b> Section 36, Township 10 North, Range 1 West, W.M.	

<b>Do normal circumstances exist at the site?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Plot ID:</b> TP 1 wetland
<b>Is the site significantly disturbed (atypical situation)?</b>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>Community ID:</b> --
<b>Is the site a potential problem area?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Transect ID:</b> --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Douglas fir*	<i>Pseudotsuga menziesii</i>	Tree	50	FACU
2. Red-osier dogwood*	<i>Cornus sericea</i>	Shrub	30	FACW
3. Hardhack*	<i>Spiraea douglasii</i>	Shrub	30	FACW
4. Sword fern	<i>Polystichum munitum</i>	Herb	10	FACU
5. Reed canarygrass*	<i>Phalaris arundinacea</i>	Herb	70	FACW
6. Himalayan blackberry	<i>Rubus armenicus</i>	Herb	10	FACU
7. Lady fern*	<i>Athyrium filix-femina</i>	Herb	30	FAC
8. Slough sedge	<i>Carex obnupta</i>	Herb	10	OBL

Other species present:  
% of dominant species OBL, FACW, FACW-, FAC+, FAC 80% (more than 50% required)  
**Remarks:** \* = dominant species based on the 50/20 rule = 4/5 = 80%

Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Type(s): --

**Wetland Hydrology Indicators**

<b>Primary Indicators</b>	<b>Secondary Indicators (2 required)</b>
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels < 12in. bgs
<input type="checkbox"/> Saturated < 12 in.	<input checked="" type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Water Stained Leaves
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other (Explain in remarks)
<input checked="" type="checkbox"/> Drainage Patterns	

Hydrology Criteria Met?  Yes  No

**Remarks:** Soils were damp during the ELS evaluation.

**SOILS:**

Map Unit Name: Natal silty clay loam, 0-4% slopes (#134)  
 (Series and Phase)  
 Taxonomy (Subgroup): Umbric Endoaqualfs

Field observations confirm mapped soil type?  Yes  No

**Drainage Class:**

<input type="checkbox"/> Excessively Drained
<input type="checkbox"/> Somewhat Excessively Drained
<input type="checkbox"/> Well Drained
<input type="checkbox"/> Moderately Well Drained
<input type="checkbox"/> Somewhat Poorly Drained
<input checked="" type="checkbox"/> Poorly Drained
<input type="checkbox"/> Very Poorly Drained

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-16	A	10 YR 3/1	5 Y 6/3	common	medium	sandy clay
second mottle	A	---	10 YR 5/8	common	medium	sandy clay

**Hydric Soil Indicators**

<input type="checkbox"/> Histosol (-ists)	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon (8-16")	<input checked="" type="checkbox"/> Gleyed or Low Chroma Colors	<input type="checkbox"/> Organic Pans
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Mg or Fe Concretions	<input checked="" type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> High Organic Content in Layer of Sandy Soils	<input checked="" type="checkbox"/> Other (explain in remarks)

**Remarks:** Mottling.

Soils Criteria Met?  Yes  No

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria are met

Is test plot within a wetland?  Yes  No



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1157 3<sup>rd</sup> Avenue, Suite 220, Longview, Washington 98632  
(360)578-1371 FAX (360)414-9305  
DATA FORM – Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

<b>Project Site:</b> Silver Lake Forest Reserve	<b>Date:</b> 2/23/06	<b>Project #:</b> 684.02
<b>Applicant/Owner:</b> Weyerhaeuser Real Estate Development Company	<b>County/State:</b> Cowlitz County, Washington	
<b>Test Plot Location:</b> West of Sightly Road, outside Wetland C	<b>Sec/Town/Range:</b> Sections 6, Township 9 North, Range 1 East, W.M.	

<b>Do normal circumstances exist at the site?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Plot ID:</b> TP 2 upland
<b>Is the site significantly disturbed (atypical situation)?</b>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>Community ID:</b> --
<b>Is the site a potential problem area?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Transect ID:</b> --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Black cottonwood*	<i>Populus balsamifera</i>	Tree	30	FAC
2. Himalayan blackberry*	<i>Rubus armenicus</i>	Herb	80	FACU
3. Sword fern	<i>Polystichum munitum</i>	Herb	10	FACU
4.				
5.				
6.				
7.				
8.				

Other species present: slough sedge, vine maple  
 % of dominant species OBL, FACW, FACW-, FAC+, FAC 50% (more than 50% required)  
**Remarks:**\*=dominant species based on the 50/20 rule = 1/2 = 50%

Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Depth of surface water: NA  
 Depth to free water in pit: NA  
 Depth to saturated soils: NA

Type(s): --

**Wetland Hydrology Indicators**

<b>Primary Indicators</b>	<b>Secondary Indicators (2 required)</b>
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels < 12in. bgs
<input type="checkbox"/> Saturated < 12 in.	<input checked="" type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Water Stained Leaves
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other (Explain in remarks)
<input type="checkbox"/> Drainage Patterns	

Hydrology Criteria Met?  Yes  No

**Remarks:** No water was present during the ELS evaluation.

**SOILS:**

Map Unit Name: Natal silty clay loam, 0-4% slopes (#134)  
 (Series and Phase)  
 Taxonomy (Subgroup): Umbric Endoaqualfs

Field observations confirm mapped soil type?  Yes  No

**Drainage Class:**

<input type="checkbox"/> Excessively Drained
<input type="checkbox"/> Somewhat Excessively Drained
<input type="checkbox"/> Well Drained
<input type="checkbox"/> Moderately Well Drained
<input type="checkbox"/> Somewhat Poorly Drained
<input checked="" type="checkbox"/> Poorly Drained
<input type="checkbox"/> Very Poorly Drained

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-16	A	5 YR 3/1	---	---	---	sandy clay loam

**Hydric Soil Indicators**

<input type="checkbox"/> Histosol (-ists)	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon (8-16")	<input checked="" type="checkbox"/> Gleyed or Low Chroma Colors	<input type="checkbox"/> Organic Pans
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Mg or Fe Concretions	<input checked="" type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> High Organic Content in Layer of Sandy Soils	<input type="checkbox"/> Other (explain in remarks)

**Remarks:**

Soils Criteria Met?  Yes  No

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria are not met

Is test plot within a wetland?  Yes  No



# ECOLOGICAL LAND SERVICES, INC.

1157 3<sup>rd</sup> Avenue, Suite 220, Longview, Washington 98632  
(360)578-1371 FAX (360)414-9305  
DATA FORM - Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

<b>Project Site:</b> Silver Lake Forest Reserve	<b>Date:</b> 2/23/06	<b>Project #:</b> 684.02
<b>Applicant/Owner:</b> Weyerhaeuser Real Estate Development Company	<b>County/State:</b> Cowlitz County, Washington	
<b>Test Plot Location:</b> Wetland D	<b>Sec/Town/Range:</b> Section 6, Township 9 North, Range 1 East, W.M.	

<b>Do normal circumstances exist at the site?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Plot ID:</b> TP 3 wetland
<b>Is the site significantly disturbed (atypical situation)?</b>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>Community ID:</b> --
<b>Is the site a potential problem area?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Transect ID:</b> --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Soft rush*	<i>Juncus effusus</i>	Herb	80	FACW
2. Evergreen blackberry*	<i>Rubus laciniatus</i>	Herb	30	FACU+
3. Himalayan blackberry	<i>Rubus armenicus</i>	Herb	10	FACU
4. Douglas fir*	<i>Pseudotsuga menziesii</i>	Shrub	10	FACU
5.				
6.				
7.				
8.				

Other species present: reed canarygrass, slough sedge, sword fern  
 % of dominant species OBL, FACW, FACW-, FAC+, FAC 33% (more than 50% required)  
**Remarks:** \*=dominant species based on the 50/20 rule: 1/3 =33%. Berries and Fir growing on small hummocks in wetland.

Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Type(s): --

**Wetland Hydrology Indicators**

<b>Primary Indicators</b>	<b>Secondary Indicators (2 required)</b>
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels < 12in. bgs
<input checked="" type="checkbox"/> Saturated < 12 in.	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Water Stained Leaves
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other (Explain in remarks)
<input checked="" type="checkbox"/> Drainage Patterns	

Hydrology Criteria Met?  Yes  No

**Remarks:** Soils were damp.

**SOILS:**

Map Unit Name: Hazeldell gravelly silt loam, 20-30% slopes (#77)  
 (Series and Phase)  
 Taxonomy (Subgroup): Xeric Palehumults

Field observations confirm mapped soil type?  Yes  No

**Drainage Class:**

<input type="checkbox"/> Excessively Drained
<input type="checkbox"/> Somewhat Excessively Drained
<input checked="" type="checkbox"/> Well Drained
<input type="checkbox"/> Moderately Well Drained
<input type="checkbox"/> Somewhat Poorly Drained
<input type="checkbox"/> Poorly Drained
<input type="checkbox"/> Very Poorly Drained

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-5	A	10 YR 4/1	---	---	---	sandy clay
5-16	A	10 YR 4/1	10 YR 4/2	few	medium	sandy clay
second mottle	A	---	10 YR 6/8	few	medium	---

**Hydric Soil Indicators**

<input type="checkbox"/> Histosol (-ists)	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon (8-16")	<input checked="" type="checkbox"/> Gleyed or Low Chroma Colors	<input type="checkbox"/> Organic Pans
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Mg or Fe Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> High Organic Content in Layer of Sandy Soils	<input checked="" type="checkbox"/> Other (explain in remarks)

**Remarks:** Mottling.

Soils Criteria Met?  Yes  No

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria are met. Dominance of upland vegetation is a result of clearcut habitat and douglas fir replanting

Is test plot within a wetland?  Yes  No



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(360)578-1371 FAX (360)414-9305  
DATA FORM – Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

<b>Project Site:</b> Silver Lake Forest Reserve	<b>Date:</b> 2/23/06	<b>Project #:</b> 684.02
<b>Applicant/Owner:</b> Weyerhaeuser Real Estate Development Company	<b>County/State:</b> Cowlitz County, Washington	
<b>Test Plot Location:</b> South of Wetland D	<b>Sec/Town/Range:</b> Section 6, Township 9 North, Range 1 East, W.M.	

<b>Do normal circumstances exist at the site?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Plot ID:</b> TP 4 upland
<b>Is the site significantly disturbed (atypical situation)?</b>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>Community ID:</b> --
<b>Is the site a potential problem area?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Transect ID:</b> --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Douglas fir*	<i>Pseudotsuga menziesii</i>	Shrub	20	FACU
2. Sword fern*	<i>Polystichum munitum</i>	Herb	30	FACU
3. Himalayan blackberry*	<i>Rubus armenicus</i>	Herb	80	FACU
4. Soft rush*	<i>Juncus effusus</i>	Herb	40	FACW
5.				
6.				
7.				
8.				

Other species present: slough sedge  
% of dominant species OBL, FACW, FACW-, FAC+, FAC 25% (more than 50% required)  
**Remarks:**\*=dominant species based on the 50/20 rule: 1/4 = 25%

Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
Is it the growing season?  Yes  No  
Is site inundated?  Yes  No

Depth of surface water: NA  
Depth to free water in pit: NA  
Depth to saturated soils: NA

Type(s): --

<b>Primary Indicators</b>	<b>Wetland Hydrology Indicators</b>
<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated < 12 in. <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns	<b>Secondary Indicators (2 required)</b> <input type="checkbox"/> Oxidized Root Channels < 12in. bgs <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in remarks)

Hydrology Criteria Met?  Yes  No

**Remarks:** Soils were damp

**SOILS:**

Map Unit Name: Hazel dell gravelly silt loam, 20-30% slopes (#77)  
(Series and Phase)  
Taxonomy (Subgroup): Xeric Palehumults

Field observations confirm mapped soil type?  Yes  No

**Drainage Class:**

<input type="checkbox"/> Excessively Drained <input type="checkbox"/> Somewhat Excessively Drained <input checked="" type="checkbox"/> Well Drained <input type="checkbox"/> Moderately Well Drained <input type="checkbox"/> Somewhat Poorly Drained <input type="checkbox"/> Poorly Drained <input type="checkbox"/> Very Poorly Drained
--

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-16	A	10 YR 4/2	10 YR 4/1	few	fine	sandy clay

**Hydric Soil Indicators**

<input type="checkbox"/> Histosol (-ists) <input type="checkbox"/> Histic Epipedon (8-16") <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low Chroma Colors <input type="checkbox"/> Mg or Fe Concretions <input type="checkbox"/> High Organic Content in Layer of Sandy Soils	<input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Organic Pans <input type="checkbox"/> Listed on Local Hydric Soils List <input checked="" type="checkbox"/> Other (explain in remarks)
---	---	--

**Remarks:** Mottling

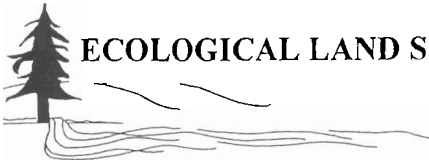
Soils Criteria Met?  Yes  No

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
Wetland Hydrology Present?  Yes  No  
Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria are not met.

Is test plot within a wetland?  Yes  No



ECOLOGICAL LAND SERVICES, INC.

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(360)578-1371 FAX (360)414-9305
DATA FORM - Routine Onsite Wetland Determination
1987 COE Wetlands Delineation Manual
1997 Washington State Delineation Manual

Project Site: Silver Lake Forest Reserve Date: 2/23/06 Project #: 684.02
Applicant/Owner: Weyerhaeuser Real Estate Development Company County/State: Cowlitz County, Washington
Test Plot Location: Wetland A Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.

Do normal circumstances exist at the site? [ ] Yes [X] No Plot ID: TP 5 wetland
Is the site significantly disturbed (atypical situation)? [X] Yes [ ] No Community ID: --
Is the site a potential problem area? [ ] Yes [X] No Transect ID: --

VEGETATION (Strata: tree, sapling, shrub, woody vine, herb)
Dominant Plant Species table with columns: Common Name, Scientific Name, Strata, % Cover, Indicator Status.
Other species present: Canada thistle, slough sedge
% of dominant species OBL, FACW, FACW-, FAC+, FAC 100% (more than 50% required)
Remarks: \*=dominant species based on the 50/20 rule = 2/2 = 100%
Vegetation Criteria Met? [X] Yes [ ] No

HYDROLOGY
Recorded data available? [ ] Yes [X] No Type(s): --
Is it the growing season? [ ] Yes [X] No
Is site inundated? [ ] Yes [X] No
Wetland Hydrology Indicators: Primary Indicators (Inundated, Saturated < 12 in., Water Marks, Drift Lines, Sediment Deposits, Drainage Patterns) and Secondary Indicators (Oxidized Root Channels < 12in. bgs, Local Soil Survey Data, Water Stained Leaves, FAC-Neutral Test, Other).
Hydrology Criteria Met? [X] Yes [ ] No
Remarks: Soils were saturated in the gleyed horizon. Clay soils likely did not allow water to flow into soil pit.

SOILS:
Map Unit Name: Hazeldell gravelly silt loam, 20-30% slopes (#77)
Taxonomy (Subgroup): Xeric Palehumults
Drainage Class: [ ] Excessively Drained [ ] Somewhat Excessively Drained [X] Well Drained [ ] Moderately Well Drained [ ] Somewhat Poorly Drained [ ] Poorly Drained [ ] Very Poorly Drained
Field observations confirm mapped soil type? [ ] Yes [X] No
Profile Description table with columns: Depth (inches), Horizon, Matrix color, Mottle Color, Mottle Abundance, Mottle Size, Texture.
Hydric Soil Indicators: [ ] Histosol (-ists) [ ] Reducing Conditions [ ] Organic Streaking in Sandy Soils [ ] Histic Epipedon (8-16") [X] Gleyed or Low Chroma Colors [ ] Organic Pans [ ] Sulfidic Odor [ ] Mg or Fe Concretions [ ] Listed on Local Hydric Soils List [ ] Aquic Moisture Regime [ ] High Organic Content in Layer of Sandy Soils [X] Other (explain in remarks)
Remarks: Mottling.
Soils Criteria Met? [X] Yes [ ] No

WETLAND DETERMINATION
Hydrophytic Vegetation Dominant? [X] Yes [ ] No
Wetland Hydrology Present? [X] Yes [ ] No
Hydric Soil Present? [X] Yes [ ] No
Remarks: Wetland criteria are met
Is test plot within a wetland? [X] Yes [ ] No



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DATA FORM – Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

Project Site: Silver Lake Forest Reserve	Date: 2/28/06	Project #: 684.02
Applicant/Owner: Weyerhaeuser Real Estate Development Company	County/State: Cowlitz County, Washington	
Test Plot Location: Upland east of Wetland A	Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.	

Do normal circumstances exist at the site?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Plot ID: TP 6 upland
Is the site significantly disturbed (atypical situation)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Community ID: --
Is the site a potential problem area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Transect ID: --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Bracken fern	<i>Pteridium aquilinum</i>	Herb	30	FACU
2. Tall fescue*	<i>Festuca arundinacea</i>	Herb	80	FAC-
3. Salal	<i>Gaultheria shallon</i>	Herb	20	FACU
4. Oregon grape	<i>Mahonia nervosa</i>	Herb	20	FACU
5. Soft rush	<i>Juncus effusus</i>	Herb	10	FACW
6. Trailing blackberry	<i>Rubus ursinus</i>	Herb	20	FACU
7. Douglas fir*	<i>Pseudotsuga menziesii</i>	Shrub	20	FACU
8. Red-osier dogwood*	<i>Cornus sericea</i>	Shrub	10	FACW

Other species present:  
% of dominant species OBL, FACW, FACW-, FAC+, FAC 33% (more than 50% required)  
**Remarks:**\*=dominant species based on the 50/20 rule = 1/3 = 33%

Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Type(s): --

Depth of surface water: <u>NA</u> Depth to free water in pit: <u>NA</u> Depth to saturated soils: <u>NA</u>	<b>Primary Indicators</b> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated < 12 in. <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns	<b>Wetland Hydrology Indicators</b> <b>Secondary Indicators (2 required)</b> <input type="checkbox"/> Oxidized Root Channels < 12in. bgs <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in remarks)
---	--	--

Hydrology Criteria Met?  Yes  No

**Remarks:**

**SOILS:**

Map Unit Name: Hazeldell gravelly silt loam, 20-30% slopes (#77)  
 (Series and Phase)  
 Taxonomy (Subgroup): Xeric Palehumults

Field observations confirm mapped soil type?  Yes  No

**Drainage Class:**

<input type="checkbox"/> Excessively Drained
<input type="checkbox"/> Somewhat Excessively Drained
<input checked="" type="checkbox"/> Well Drained
<input type="checkbox"/> Moderately Well Drained
<input type="checkbox"/> Somewhat Poorly Drained
<input type="checkbox"/> Poorly Drained
<input type="checkbox"/> Very Poorly Drained

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-16	A	10 YR 3/2	10 YR 4/1	common	medium	sandy clay loam

**Hydric Soil Indicators**

<input type="checkbox"/> Histosol (-ists)	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon (8-16")	<input checked="" type="checkbox"/> Gleyed or Low Chroma Colors	<input type="checkbox"/> Organic Pans
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Mg or Fe Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> High Organic Content in Layer of Sandy Soils	<input checked="" type="checkbox"/> Other (explain in remarks)

**Remarks:** Mottling.

Soils Criteria Met?  Yes  No

**WETLAND DETERMINATION**

Chlorophyll Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria are not met.

Is test plot within a wetland?  Yes  No





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(360)578-1371 FAX (360)414-9305  
DATA FORM – Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

Project Site: Silver Lake Forest Reserve	Date: 2/23/06	Project #: 684.02
Applicant/Owner: Weyerhaeuser Real Estate Development Company	County/State: Cowlitz County, Washington	
Test Plot Location: Outside Wetland A west boundary	Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.	

Do normal circumstances exist at the site?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Plot ID: TP 7 upland
Is the site significantly disturbed (atypical situation)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Community ID: --
Is the site a potential problem area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Transect ID: --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Beaked hazelnut*	<i>Corylus cornuta</i>	Shrub	20	FACU
2. Douglas fir*	<i>Pseudotsuga menziesii</i>	Shrub	10	FACU
3. Sword fern*	<i>Polystichum munitum</i>	Herb	20	FACU
4. Soft rush	<i>Juncus effusus</i>	Herb	10	FACW
5. Salal*	<i>Gaultheria shallon</i>	Herb	30	FACU
6. Oregon grape*	<i>Mahonia nervosa</i>	Herb	30	FACU
7.				
8.				

Other species present: bracken fern, evergreen blackberry  
 % of dominant species OBL, FACW, FACW-, FAC+, FAC 0% (more than 50% required)  
 Remarks: \*=dominant species based on the 50/20 rule: 0/5 = 0%  
 Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Type(s): --

**Primary Indicators**

- Inundated
- Saturated < 12 in.
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns

**Secondary Indicators (2 required)**

- Oxidized Root Channels < 12in. bgs
- Local Soil Survey Data
- Water Stained Leaves
- FAC-Neutral Test
- Other (Explain in remarks)

Depth of surface water: NA  
 Depth to free water in pit: NA  
 Depth to saturated soils: NA

Hydrology Criteria Met?  Yes  No

Remarks:

**SOILS:**

Map Unit Name: Natal silty clay loam, 0-4% slopes (#134)  
 (Series and Phase)  
 Taxonomy (Subgroup): Umbric Endoaqualfs

Drainage Class:  Excessively Drained  
 Somewhat Excessively Drained  
 Well Drained  
 Moderately Well Drained  
 Somewhat Poorly Drained  
 Poorly Drained  
 Very Poorly Drained

Field observations confirm mapped soil type?  Yes  No

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-16	A	10 YR 4/1	---	---	---	sandy clay loam

**Hydric Soil Indicators**

- Histosol (-ists)
- Histic Epipedon (8-16")
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low Chroma Colors
- Mg or Fe Concretions
- High Organic Content in Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Organic Pans
- Listed on Local Hydric Soils List
- Other (explain in remarks)

Soils Criteria Met?  Yes  No

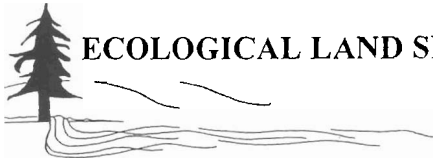
Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

Remarks: Wetland criteria are not met

Is test plot within a wetland?  Yes  No



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(360)578-1371 FAX (360)414-9305  
DATA FORM – Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

Project Site: Silver Lake Forest Reserve	Date: 2/23/06	Project #: 684.02
Applicant/Owner: Weyerhaeuser Real Estate Development Company	County/State: Cowlitz County, Washington	
Test Plot Location: Wetland A, west portion	Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.	

Do normal circumstances exist at the site?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Plot ID: TP 8 wetland
Is the site significantly disturbed (atypical situation)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Community ID: --
Is the site a potential problem area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Transect ID: --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Red alder*	<i>Alnus rubra</i>	Tree	20	FAC
2. Douglas fir*	<i>Pseudotsuga menziesii</i>	Tree	10	FACU
3. Indian plum*	<i>Oemleria cerasiformis</i>	Shrub	10	FACU
4. Evergreen blackberry	<i>Rubus laciniatus</i>	Herb	20	FACU+
5. Soft rush*	<i>Juncus effusus</i>	Herb	70	FACW
6. Sword fern	<i>Polystichum munitum</i>	Herb	20	FACU+
7.				
8.				

Other species present: bracken fern, Himalayan blackberry  
 % of dominant species OBL, FACW, FACW-, FAC+, FAC 50% (more than 50% required)  
**Remarks:** \*=dominant species based on the 50/20 rule = 2/4 = 50%. Clearcut replanted with fir on hummocks within wetland.  
 Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Type(s): --

Depth of surface water: NA  
 Depth to free water in pit: NA  
 Depth to saturated soils: 0"

**Primary Indicators**  
 Inundated  
 Saturated < 12 in.  
 Water Marks  
 Drift Lines  
 Sediment Deposits  
 Drainage Patterns

**Wetland Hydrology Indicators**  
**Secondary Indicators (2 required)**  
 Oxidized Root Channels < 12in. bgs  
 Local Soil Survey Data  
 Water Stained Leaves  
 FAC-Neutral Test  
 Other (Explain in remarks)

Hydrology Criteria Met?  Yes  No

**Remarks:** Soils saturated at the surface. Heavy clay soils prevented test pit from filling with water.

**SOILS:**

Map Unit Name: Natal silty clay loam, 0-4% slopes (#134)  
 (Series and Phase)  
 Taxonomy (Subgroup): Umbric Endoaqualfs

Field observations confirm mapped soil type?  Yes  No

**Drainage Class:**  
 Excessively Drained  
 Somewhat Excessively Drained  
 Well Drained  
 Moderately Well Drained  
 Somewhat Poorly Drained  
 Poorly Drained  
 Very Poorly Drained

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-8	A	Gley I 3/N	7.5 YR 4/4	few	medium	clay
8-16	A	Gley 2 5/10 BG	7.5 YR 4/4	few	medium	clay

**Hydric Soil Indicators**  
 Histosol (-ists)  
 Histic Epipedon (8-16")  
 Sulfidic Odor  
 Aquic Moisture Regime

Reducing Conditions  
 Gleyed or Low Chroma Colors  
 Mg or Fe Concretions  
 High Organic Content in Layer of Sandy Soils

Organic Streaking in Sandy Soils  
 Organic Pans  
 Listed on Local Hydric Soils List  
 Other (explain in remarks)

**Remarks:** Mottling

Soils Criteria Met?  Yes  No

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria is met

Is test plot within a wetland?  Yes  No



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 DATA FORM - Routine Onsite Wetland Determination  
 1987 COE Wetlands Delineation Manual  
 1997 Washington State Delineation Manual

<b>Project Site:</b> Silver Lake Forest Reserve	<b>Date:</b> 2/23/06	<b>Project #:</b> 684.02
<b>Applicant/Owner:</b> Weyerhaeuser Real Estate Development Company	<b>County/State:</b> Cowlitz County, Washington	
<b>Test Plot Location:</b> West of the Hansen Road gate, within Wetland B	<b>Sec/Town/Range:</b> Section 36, Township 10 North, Range 1 West, W.M.	

<b>Do normal circumstances exist at the site?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Plot ID:</b> TP 9 wetland
<b>Is the site significantly disturbed (atypical situation)?</b>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>Community ID:</b> --
<b>Is the site a potential problem area?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<b>Transect ID:</b> --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Red alder*	<i>Alnus rubra</i>	Tree	30	FAC
2. Reed canarygrass*	<i>Phalaris arundinacea</i>	Herb	70	FACW
3. Soft rush*	<i>Juncus effusus</i>	Herb	80	FACW
4. Evergreen blackberry	<i>Rubus laciniatus</i>	Herb	5	FACU+
5. Lady fern	<i>Athyrium filix-femina</i>	Herb	10	FAC
6.				
7.				
8.				

Other species present: Douglas fir  
 % of dominant species OBL, FACW, FACW-, FAC+, FAC 100% (more than 50% required)  
**Remarks:**\*=dominant species based on the 50/20 rule = 3/3 = 100%

Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Depth of surface water: NA  
 Depth to free water in pit: 1"  
 Depth to saturated soils: 0"

Type(s): --

**Wetland Hydrology Indicators**

<b>Primary Indicators</b>	<b>Secondary Indicators (2 required)</b>
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels < 12in. bgs
<input checked="" type="checkbox"/> Saturated < 12 in.	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Water Stained Leaves
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other (Explain in remarks)
<input checked="" type="checkbox"/> Drainage Patterns	

Hydrology Criteria Met?  Yes  No

**Remarks:**

**SOILS:**

Map Unit Name: Sequest silt loam, 20-30% slopes (#194)  
 (Series and Phase)  
 Taxonomy (Subgroup): Xeric Haplohumults

Field observations confirm mapped soil type?  Yes  No

**Drainage Class:**

<input type="checkbox"/> Excessively Drained
<input type="checkbox"/> Somewhat Excessively Drained
<input checked="" type="checkbox"/> Well Drained
<input type="checkbox"/> Moderately Well Drained
<input type="checkbox"/> Somewhat Poorly Drained
<input type="checkbox"/> Poorly Drained
<input type="checkbox"/> Very Poorly Drained

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-3	A	10 YR 4/1	---	---	---	sandy clay
3-16	A	Gley 1 5/10Y	Gley 1 7/5GY	common	medium	clay

**Hydric Soil Indicators**

<input type="checkbox"/> Histosol (-ists)	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon (8-16")	<input checked="" type="checkbox"/> Gleyed or Low Chroma Colors	<input type="checkbox"/> Organic Pans
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Mg or Fe Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> High Organic Content in Layer of Sandy Soils	<input checked="" type="checkbox"/> Other (explain in remarks)

**Remarks:** Mottling.

Soils Criteria Met?  Yes  No

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria are met.

Is test plot within a wetland?  Yes  No



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DATA FORM – Routine Onsite Wetland Determination  
1987 COE Wetlands Delineation Manual  
1997 Washington State Delineation Manual

Project Site: Silver Lake Forest Reserve	Date: 2/23/06	Project # : 684.02
Applicant/Owner: Weyerhaeuser Real Estate Development Company	County/State: Cowlitz County, Washington	
Test Plot Location: West of the Hansen Road gate, east of Wetland B	Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.	

Do normal circumstances exist at the site?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Plot ID: TP 10 upland
Is the site significantly disturbed (atypical situation)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Community ID: --
Is the site a potential problem area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Transect ID: --

**VEGETATION** (Strata: tree, sapling, shrub, woody vine, herb)

**Dominant Plant Species**

Common Name	Scientific Name	Strata	% Cover	Indicator Status
1. Evergreen blackberry	<i>Rubus laciniatus</i>	Herb	10	FACU+
2. Sword fern	<i>Polystichum munitum</i>	Herb	15	FACU
3. Himalayan blackberry*	<i>Rubus armenicus</i>	Herb	40	FACU
4. Red alder*	<i>Alnus rubra</i>	Herb	30	FAC
5. Douglas fir*	<i>Pseudotsuga menziesii</i>	Tree	40	FACU
6.				
7.				
8.				

Other species present:  
% of dominant species OBL, FACW, FACW-, FAC+, FAC 33% (more than 50% required)  
**Remarks:** \*=dominant species based on the 50/20 rule = 1/3 = 33%

Vegetation Criteria Met?  Yes  No

**HYDROLOGY**

Recorded data available?  Yes  No  
 Is it the growing season?  Yes  No  
 Is site inundated?  Yes  No

Type(s): --

Wetland Hydrology Indicators

<b>Primary Indicators</b> <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated < 12 in. <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns	<b>Secondary Indicators (2 required)</b> <input type="checkbox"/> Oxidized Root Channels < 12in. bgs <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> Water Stained Leaves <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in remarks)
--	---

Depth of surface water: NA  
 Depth to free water in pit: NA  
 Depth to saturated soils: NA

Hydrology Criteria Met?  Yes  No

**Remarks:**

**SOILS:**

Map Unit Name: Sequest silt loam, 20-30% slopes (#194)  
 (Series and Phase)  
 Taxonomy (Subgroup): Xeric Haplohumults

Field observations confirm mapped soil type?  Yes  No

Drainage Class:  Excessively Drained  
 Somewhat Excessively Drained  
 Well Drained  
 Moderately Well Drained  
 Somewhat Poorly Drained  
 Poorly Drained  
 Very Poorly Drained

**Profile Description**

Depth (inches)	Horizon	Matrix color	Mottle Color	Mottle Abundance (few, common, many)	Mottle Size (fine, med, coarse)	Texture
0-10	A	10 YR 3/4	---	---	---	sandy loam
10-16	A	Gley 1 3/N	---	---	---	clay

**Hydric Soil Indicators**

<input type="checkbox"/> Histosol (-ists)	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon (8-16")	<input checked="" type="checkbox"/> Gleyed or Low Chroma Colors	<input type="checkbox"/> Organic Pans
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Mg or Fe Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> High Organic Content in Layer of Sandy Soils	<input type="checkbox"/> Other (explain in remarks)

Soils Criteria Met?  Yes  No

**Remarks:**

**WETLAND DETERMINATION**

Hydrophytic Vegetation Dominant?  Yes  No  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soil Present?  Yes  No

**Remarks:** Wetland criteria are not met.

Is test plot within a wetland?  Yes  No

## DRAFT WETLAND RATING FORM – WESTERN WASHINGTON

Name of wetland (if known): Wetland A - Weyerhaeuser Real Estate Development Company

Location: SEC: 36, 31 TOWNSHIP: 10N, 9N RANGE: 1W, 2E  
(attach map with outline of wetland to rating form)

Person(s) Rating Wetland: T. Haderly Affiliation: Ecological Land Services, Inc.  
Date of site visit: December 2005

DRAFT SUMMARY OF RATING			
<b>Category based on FUNCTIONS provided by wetland</b>			
I ___ II <u>X</u> III ___ IV ___			
Category I = Score >70	Score for Water Quality Functions	20	
Category II = Score 51-69	Score for Hydrologic Functions	12	
Category III = Score 30-50	Score for Habitat Functions	31	
Category IV = Score < 30	<b>TOTAL Score for functions</b>	<b>51</b>	
<b>Category based on SPECIAL CHARACTERISTICS of wetland</b>			
I <u>X</u> II ___ Does not Apply			
<b>Final Category</b> (choose the "highest" category from above)			I

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	X
Mature Forest	X	Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above			

### Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	(coho and steelhead)	
SP2. <i>Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.	(coho and steelhead)	
SP3. <i>Does the wetland contain individuals of Priority species listed by the WDFW for the state?</i>		Unknown
SP4. <i>Does the wetland have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Unknown

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

## Classification of Vegetated Wetlands for Western Washington

Wetland Name: Wetland A-Weyerhaeuser (WREDC), Date: December 2005

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO – go to 2     YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?  YES – **Freshwater Tidal Fringe**     NO – **Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see pp. 6 and 9).*

2. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.

NO – go to 3     YES – The wetland class is **Flats**

If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the wetland meet both of the following criteria?

- The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
- At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO – go to 4     YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the wetland meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks( depressions are usually <3ft diameter and less than 1 foot deep).*

NO - go to 5     YES – The wetland class is **Slope**

5. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer “yes.” *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO - go to 6     YES – The wetland class is **Riverine**

6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7     YES – The wetland class is **Depressional**

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8     YES – The wetland class is **Depressional**

8. Your wetland seems to be difficult to classify. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland being rated. If the area of the second class is less than 10% classify the wetland using the first class.

HGM Classes Within a Delineated Wetland Boundary	Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

D Depressional and Flats Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 38)	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet points = 3 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland has an unconstricted surface outlet points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch points = 1	
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES points = 4 NO points = 0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest class): Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0	
D	D 1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 NOTE: See text for indicators of seasonal and permanent inundation.	
D	Total for D 1 Add the points in the boxes above	
D	D 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 44) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input type="checkbox"/> Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	

D Depressional and Flats Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
D	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 46)	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet</i> Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	
D	D 3.3 Contribution of wetland to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland itself</i> The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 <b>Wetland is in the FLATS class (basin = the wetland, by definition) points = 5</b>	5
D	Total for D 3 Add the points in the boxes above	
D	D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 49) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides, helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater. <i>Note which of the following indicators of opportunity apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	

R Riverine and Freshwater Tidal Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
R	R 3. Does the wetland have the potential to reduce flooding and erosion? (see p. 54)	
R	R 3.1 Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream). If the ratio is more than 20 points = 9 If the ratio is between 10-20 points = 6 If the ratio is 5- <10 points = 4 If the ratio is 1- <5 points = 2 If the ratio is <1 points = 1	
R	R 3.2 Characteristics vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. Forest or shrub for > 1/3 area OR Emergent plants > 2/3 area points = 7 Forest or shrub > 1/10 area OR Emergent plants > 1/3 area points = 4 Vegetation does not meet above criteria points = 0	
R		Add the points in the boxes above
R	R 4. Does the wetland have the opportunity to reduce flooding and erosion? (see p. 57) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. <input type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. <input type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding <input type="checkbox"/> Other _____ (Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike.) <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
R	TOTAL - Hydrologic Functions Multiply the score from R3 by R4 Add score to table on p. 1	
Comments		

R Riverine and Freshwater Tidal Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
R	R 1. Does the wetland have the potential to improve water quality? (see p. 50)	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 3/4 area of wetland points = 8 Depressions cover > 1/2 area of wetland points = 4 Depressions present but cover < 1/2 area of wetland points = 2 No depressions present points = 0	
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland points = 8 Forest or shrub > 1/3 area of the wetland points = 6 Ungrazed, emergent plants > 2/3 area of wetland points = 6 Ungrazed, emergent plants > 1/3 area of wetland points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland points = 0	
R		Add the points in the boxes above
R	R 2. Does the wetland have the opportunity to improve water quality? (see p. 53) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
R	TOTAL - Water Quality Functions Multiply the score from R1 by R2 Add score to table on p. 1	
Comments		



Lake-Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
L	L 1. Does the wetland have the <b>potential</b> to improve water quality? (see p. 59)	
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide points = 6 Vegetation is more than 16 (5m) wide and <33ft points = 3 Vegetation is more than 6ft (2m) wide and <16 ft points = 1 Vegetation is less than 6 ft wide points = 0	6
I	L 1.2 Characteristics of the vegetation in the wetland: <i>choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. In this case the herbaceous plants can be either the dominant form (called emergent class) or as an understory in a shrub or forest community.</i> Herbaceous plants cover >90% of the vegetated area points = 6 Herbaceous plants cover >2/3 of the vegetated area points = 4 Herbaceous plants cover >1/3 of the vegetated area points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed cover > 2/3 of the vegetated area points = 0	4
L	Add the points in the boxes above	10
L	L 2. Does the wetland have the <b>opportunity</b> to improve water quality? (see p. 61) Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. <i>Note which of the following conditions provide the sources of pollutants.</i> <input checked="" type="checkbox"/> Wetland is along the shores of a lake or reservoir that does not meet water quality standards <input checked="" type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Polluted water discharges to wetland along upland edge <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input checked="" type="checkbox"/> Residential or urban areas are within 150 ft of wetland <input type="checkbox"/> Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) <input checked="" type="checkbox"/> Power boats with gasoline or diesel engines use the lake <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
L	<b>TOTAL - Water Quality Functions</b> Multiply the score from L1 by L2 <i>Add score to table on p. 1</i>	20

Comments

Lake-Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
L	L 3. Does the wetland have the <b>potential</b> to reduce shoreline erosion? (see p. 62)	
L	L 3 Average width and characteristics of vegetation along the lakeshore ( <b>do not</b> include aquatic bed): ( <i>choose the highest scoring description that matches conditions in the wetland</i> ): >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 6 >¼ of fringe vegetation is shrubs or trees at least 6 ft. (2m) wide points = 4 >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 4 Fringe vegetation is at least 6 ft (2m) wide points = 2 Fringe vegetation is less than 6 ft (2m) wide points = 0	6
L	Record the points from the box above	6
L	L 4. Does the wetland have the <b>opportunity</b> to reduce erosion? (see p. 63) Are there features along the shore which will be impacted if the shoreline erodes? <i>Note which of the following conditions apply.</i> <input type="checkbox"/> There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. <input checked="" type="checkbox"/> There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other than wetland) that can be damaged by shoreline erosion <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
L	<b>TOTAL - Hydrologic Functions</b> Multiply the score from L 3 by L 4 <i>Add score to table on p. 1</i>	12

Comments

S Slope Wetlands		Points
<b>WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality</b>		
S	S 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 64)	
S	S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) ..... points = 3 Slope is 1% - 2% ..... points = 2 Slope is 2% - 5% ..... points = 1 Slope is greater than 5% ..... points = 0	
S	S 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that traps sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface. Dense, ungrazed, herbaceous vegetation > 90% of area ..... points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of area ..... points = 3 Dense, woody vegetation > 1/2 of area ..... points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of area ..... points = 1 Does not meet any of the criteria above for vegetation ..... points = 0	
S	Total for S 1 ..... Add the points in the boxes above	
S	S 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 67) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input type="checkbox"/> Grazing in the wetland or within 150 ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <input checked="" type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> Residential, urban areas, or golf courses are within 150 ft upslope of wetland <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
S	<b>TOTAL - Water Quality Functions</b> Multiply the score from S1 by S2 Add score to table on p. 1	

Comments

S Slope Wetlands		Points
<b>HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion</b>		
S	S 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 68)	
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. Dense, uncut, rigid vegetation covers >90% of area of the wetland. (Stems of plants should be thick enough (usually >1/8 in), or dense enough, to remain erect during surface flows) ..... points = 6 Dense, uncut, rigid vegetation >1/2 area of wetland ..... points = 3 Dense, uncut, rigid vegetation >1/4 area of wetland ..... points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid ..... points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood  The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES ..... points = 2 NO ..... points = 0	
S	Add the points in the boxes above	
S	S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 70) Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. <input type="checkbox"/> Wetland has surface runoff that drains to a river or stream that has flooding problems <input checked="" type="checkbox"/> Other _____ Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam.) <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	

Comments

These questions apply to wetlands of all HGM classes		Points
<b>HABITAT FUNCTIONS</b> – Indicators that wetland functions to provide important habitat		
<b>H 1. Does the wetland have the potential to provide habitat for many species?</b>		
<b>H 1.1 Vegetation structure</b> (see p. 72) Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.		
<input checked="" type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover) <input checked="" type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)		4
Add the number of vegetation types that qualify. If you have:		
	4 types or more	points = 4
	3 types	points = 2
	2 types	points = 1
	1 type	points = 0
<b>H 1.2 Hydroperiods</b> (see p. 73) Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (See text for description of hydroperiods.)		
<input checked="" type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream or river in, or adjacent to, the wetland <input checked="" type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points	4 or more types present points = 3 3 types present points = 2 2 types present points = 1	3
<b>H 1.3 Richness of Plant Species</b> (see p. 75) Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (Different patches of the same species can be combined to meet the size threshold.) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.		
	If you counted: > 19 species points = 2 5 - 19 species points = 1 <5 species points = 0	2
List species below if you want to:		

<b>H 1.4 Interspersion of habitats</b> (see p. 76) Decide from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.		
		3
NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".		
<b>H 1.5 Special Habitat Features</b> (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.		
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (diameter at bottom >4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m) <input checked="" type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present <input checked="" type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants		4
<b>H 1. TOTAL Score</b> – potential for providing habitat Add the scores in the column above		16

Comments:

<b>H 2. Does the wetland have the opportunity to provide habitat for many species?)</b>	
<p><b>H 2.1 Buffers (see p. 80)</b>  <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer.  <b>(relatively undisturbed also means no grazing) Points = 5</b></p> <p><input checked="" type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;50% circumference. <b>Points = 4</b></p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. <b>Points = 4</b></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. <b>Points = 3</b></p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. <b>Points = 3</b></p> <p><b>If buffer does not meet any of the three criteria above</b></p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing or lawns are OK. <b>Points = 2</b></p> <p><input type="checkbox"/> Heavy grazing in buffer. <b>Points = 1</b></p> <p><input type="checkbox"/> Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) <b>Points = 0</b></p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above. <b>Points = 1</b></p>	4
<p><b>H 2.2 Corridors and Connections (see p. 81)</b></p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)  <input checked="" type="checkbox"/> YES = 4 points (go to H 2.3)    <input type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR a Lake-fringe wetland</b>, if it does not have an undisturbed corridor as in the question above?  <input type="checkbox"/> YES = 2 points (go to H 2.3)    <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:  within 5 mi (8km) of a brackish or salt water estuary OR  within 3 mi of a large field or pasture (&gt;40 acres) OR  within 1 mi of a lake greater than 20 acres?  <input type="checkbox"/> YES = 1 point    <input type="checkbox"/> NO = 0 points</p>	4

<p><b>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)</b>  Which of the following priority habitats are within 330ft (100m) of the wetland?  (see text for a more detailed description of these priority habitats)</p> <p><input type="checkbox"/> <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</p> <p><input type="checkbox"/> <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> <b>Old-growth forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</p> <p><input checked="" type="checkbox"/> <b>Mature forests:</b> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> <b>Prairies:</b> Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</p> <p><input type="checkbox"/> <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> <b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages</p> <p><input type="checkbox"/> <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p><input type="checkbox"/> <b>Urban Natural Open Space:</b> A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p><input type="checkbox"/> <b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5% during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p><input type="checkbox"/> <b>Marine/Estuarine Shorelines:</b> Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).  If wetland has 3 or more priority habitats = 4 points  If wetland has 2 priority habitats = 3 points  If wetland has 1 priority habitat = 1 point                      No habitats = 0 points</p>
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<p>H 2.4 <b>Wetland Landscape</b> (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile. points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile. points = 0</p>	5
<p><b>H 2. TOTAL Score</b> -opportunity for providing habitat Add the scores in the column above</p>	15
<p><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1</p>	31

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

*Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.*

Wetland Type	Category
<p>Check off any criteria that apply to the wetland. Select the appropriate Category (from dropdown menu in Category column) when the appropriate criteria are met.</p>	
<p><b>SC 1.0 Estuarine wetlands</b> (see p. 86)</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1      <input checked="" type="checkbox"/> NO</p>	
<p><b>SC 1.1</b> Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p><input type="checkbox"/> YES = Category I      <input checked="" type="checkbox"/> NO go to SC 1.2</p>	
<p><b>SC 1.2</b> Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	

<p><b>SC 2.0 Natural Heritage Wetlands (see p. 87)</b>          Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)          S/T/R information from Appendix D <input checked="" type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/></p> <p>YES <input type="checkbox"/> – contact WNHP/DNR (see p. 79) and go to SC 2.2      NO <input checked="" type="checkbox"/></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?  <input type="checkbox"/> YES = Category I      <input type="checkbox"/> NO</p>	
<p><b>SC 3.0 Bogs (see p. 87)</b>          Does the wetland (or part of the wetland) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)          Yes <input type="checkbox"/> - go to Q. 3      No <input checked="" type="checkbox"/> go to Q. 2</p> <p>2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?          Yes <input type="checkbox"/> - go to Q. 3      No <input checked="" type="checkbox"/> - is not a bog for purpose of rating</p> <p>3. Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?          Yes <input type="checkbox"/> - Is a bog for purpose of rating      No <input type="checkbox"/> - go to Q. 4          NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</p> <p>4. Is the wetland forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?          YES <input type="checkbox"/> = Category I      NO <input type="checkbox"/> Is not a bog for purpose of rating</p>	

<p><b>SC 4.0 Forested Wetlands (see p. 90)</b>          Does the wetland have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife’s forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> <b>Old-growth forests:</b> (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and “OR” so old-growth forests do not necessarily have to have trees of this diameter.</p> <p><input checked="" type="checkbox"/> <b>Mature forests:</b> (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.  <input checked="" type="checkbox"/> YES = Category I      <input type="checkbox"/> NO</p>	<p>cat I</p>
<p><b>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</b>          Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)  <input type="checkbox"/> YES = Go to SC 5.1      NO <input checked="" type="checkbox"/> not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)          YES <input type="checkbox"/> = Category I      NO <input type="checkbox"/> = Category II</p>	

<p><b>SC 6.0 Interdunal Wetlands (see p. 93)</b>  Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?  <input type="checkbox"/> YES = Go to SC 6.1      <input checked="" type="checkbox"/> NO -- not an interdunal wetland  <i>If you answer yes you will still need to rate the wetland based on its functions.</i>  In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula – lands west of SR103</li> <li>• Grayland-Westport- lands west of SR 105</li> <li>• Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?  <input type="checkbox"/> YES = Category II      <input type="checkbox"/> NO go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?  <input type="checkbox"/> YES = Category III</p>	
<p><b>Category of wetland based on Special Characteristics</b>  Choose the "highest" rating if wetland falls into several categories, and record on p. 1.  If you answered NO for all types enter "Not Applicable" on p. 1.</p>	<p><b>Cat. I</b></p>

**DRAFT WETLAND RATING FORM – WESTERN WASHINGTON**

Name of wetland (if known): Wetland B - Weyerhaeuser Real Estate Development Company

Location: SEC: 31 TOWNSHIP: 10N RANGE: 1E, W.M.  
(attach map with outline of wetland to rating form)

Person(s) Rating Wetland: T. Haderly Affiliation: Ecological Land Services, Inc.  
Date of site visit: January 2005

DRAFT SUMMARY OF RATING									
<b>Category based on FUNCTIONS provided by wetland</b>									
I ___ II ___ III <u>X</u> IV ___									
Category I = Score >70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Score for Water Quality Functions</td> <td style="text-align: center; border: 1px solid black; width: 40px;">8</td> </tr> <tr> <td style="padding: 2px;">Score for Hydrologic Functions</td> <td style="text-align: center; border: 1px solid black;">16</td> </tr> <tr> <td style="padding: 2px;">Score for Habitat Functions</td> <td style="text-align: center; border: 1px solid black;">24</td> </tr> <tr> <td style="padding: 2px;"><b>TOTAL Score for functions</b></td> <td style="text-align: center; border: 1px solid black;"><b>48</b></td> </tr> </table>	Score for Water Quality Functions	8	Score for Hydrologic Functions	16	Score for Habitat Functions	24	<b>TOTAL Score for functions</b>	<b>48</b>
Score for Water Quality Functions	8								
Score for Hydrologic Functions	16								
Score for Habitat Functions	24								
<b>TOTAL Score for functions</b>	<b>48</b>								
<b>Category based on SPECIAL CHARACTERISTICS of wetland</b>									
I ___ II ___ Does not Apply <u>X</u>									
<b>Final Category</b> (choose the “highest” category from above)	III								

Check the appropriate type and class of wetland being rated.

Wetland Type	Wetland Class	X
Estuarine	Depressional	X
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	X	

**Does the wetland being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Unknown
SP2. <i>Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		Unknown
SP3. <i>Does the wetland contain individuals of Priority species listed by the WDFW for the state?</i>		Unknown
SP4. <i>Does the wetland have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.</i>		Unknown

*To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.*

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.



## Classification of Vegetated Wetlands for Western Washington

Wetland Name: Wetland B Date: January 2006

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO – go to 2     YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?  YES – **Freshwater Tidal Fringe**     NO – **Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see pp. 6 and 9).*

2. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it

NO – go to 3     YES – The wetland class is **Flats**

If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the wetland meet both of the following criteria?

- The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
- At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO – go to 4     YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the wetland meet all of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- The water leaves the wetland **without being impounded**?

*NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks( depressions are usually <3ft diameter and less than 1 foot deep).*

NO - go to 5     YES – The wetland class is **Slope**

5. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer “yes.” *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO - go to 6     YES – The wetland class is **Riverine**

6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7     YES – The wetland class is **Depressional**

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8     YES – The wetland class is **Depressional**

8. Your wetland seems to be difficult to classify. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland being rated. If the area of the second class is less than 10% classify the wetland using the first class.

HGM Classes Within a Delineated Wetland Boundary	Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Depressional and Flats Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 38)	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet points = 3 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland has an unconstricted surface outlet points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch points = 1	1
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest class): Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0	5
D	D 1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 NOTE: See text for indicators of seasonal and permanent inundation.	2
D	<b>Total for D 1</b> Add the points in the boxes above	8
D	D 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 44) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input checked="" type="checkbox"/> NO multiplier is 1	multiplier
D	<b>TOTAL - Water Quality Functions</b> Multiply the score from D1 by D2 Add score to table on p. 1	4

D Depressional and Flats Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicator that wetland functions to reduce flooding and stream degradation		
D	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 46)	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	0
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet</i> Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	
D	D 3.3 Contribution of wetland to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland itself.</i> The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class (basin = the wetland, by definition) points = 5	
D	<b>Total for D 3</b> Add the points in the boxes above	8
D	D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 49) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides, helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater. <i>Note which of the following indicators of opportunity apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	2
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	16

R Riverine and Freshwater Tidal Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
R	R 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 50)	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 3/4 area of wetland points = 8 Depressions cover > 1/2 area of wetland points = 4 Depressions present but cover < 1/2 area of wetland points = 2 No depressions present points = 0	
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland points = 8 Forest or shrub > 1/3 area of the wetland points = 6 Ungrazed, emergent plants > 2/3 area of wetland points = 6 Ungrazed, emergent plants > 1/3 area of wetland points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland points = 0	
R	Add the points in the boxes above	
R	R 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 53) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
R	<b>TOTAL - Water Quality Functions</b> Multiply the score from R1 by R2 Add score to table on p. 1	

Comments

R Riverine and Freshwater Tidal Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
R	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 54)	
R	R 3.1 Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream). If the ratio is more than 20 points = 9 If the ratio is between 10-20 points = 6 If the ratio is 5- <10 points = 4 If the ratio is 1- <5 points = 2 If the ration is <1 points = 1	
R	R 3.2 Characteristics vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. Forest or shrub for >1/3 area OR Emergent plants >2/3 area points = 7 Forest or shrub > 1/10 area OR Emergent plants >1/3 area points = 4 Vegetation does not meet above criteria points = 0	
R	Add the points in the boxes above	
R	R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 57) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. <input type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. <input type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding <input type="checkbox"/> Other _____ (Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike.) <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
R	<b>TOTAL - Hydrologic Functions</b> Multiply the score from R3 by R4 Add score to table on p. 1	

Comments

L Lake-Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
L	L 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 59)	
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide points = 6 Vegetation is more than 16 (5m) wide and <33ft points = 3 Vegetation is more than 6ft (2m) wide and <16 ft points = 1 Vegetation is less than 6 ft wide points = 0	
L	L 1.2 Characteristics of the vegetation in the wetland: <i>choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. In this case the herbaceous plants can be either the dominant form (called emergent class) or as an understory in a shrub or forest community.</i> Herbaceous plants cover >90% of the vegetated area points = 6 Herbaceous plants cover >2/3 of the vegetated area points = 4 Herbaceous plants cover >1/3 of the vegetated area points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed cover > 2/3 of the vegetated area points = 0	
<i>Add the points in the boxes above</i>		
L	L 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 61) Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. <i>Note which of the following conditions provide the sources of pollutants.</i> <input type="checkbox"/> Wetland is along the shores of a lake or reservoir that does not meet water quality standards <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Polluted water discharges to wetland along upland edge <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> Residential or urban areas are within 150 ft of wetland <input type="checkbox"/> Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) <input type="checkbox"/> Power boats with gasoline or diesel engines use the lake <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier  _____
L	<b>TOTAL - Water Quality Functions</b> Multiply the score from L1 by L2 <i>Add score to table on p. 1</i>	

Comments

L Lake-Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
L	L 3. Does the wetland have the <u>potential</u> to reduce shoreline erosion? (see p. 62)	
L	L 3 Average width and characteristics of vegetation along the lakeshore (do not include aquatic bed): <i>(choose the highest scoring description that matches conditions in the wetland):</i> >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m wide) points = 6 >¼ of fringe vegetation is shrubs or trees at least 6 ft. (2m) wide points = 4 >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 4 Fringe vegetation is at least 6 ft (2m) wide points = 2 Fringe vegetation is less than 6 ft (2m) wide points = 0	
L	<i>Record the points from the box above</i>	
L	L 4. Does the wetland have the <u>opportunity</u> to reduce erosion? (see p. 63) Are there features along the shore which will be impacted if the shoreline erodes? <i>Note which of the following conditions apply.</i> <input type="checkbox"/> There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. <input type="checkbox"/> There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other than wetland) that can be damaged by shoreline erosion <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	
L	<b>TOTAL - Hydrologic Functions</b> Multiply the score from L 3 by L 4 <i>Add score to table on p. 1</i>	

Comments



These questions apply to wetlands of all HGM classes		Points
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat		
<b>H 1. Does the wetland have the potential to provide habitat for many species?</b>		
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.		
<input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover) <input type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)	Add the number of vegetation types that qualify. If you have: <b>4 types or more</b> points = 4 3 types                    points = 2 2 types                    points = 1 1 type                      points = 0	2
H 1.2 <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (See text for description of hydroperiods.)		
<input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> <b>Lake-fringe wetland = 2 points</b> <input type="checkbox"/> <b>Freshwater tidal wetland = 2 points</b>	4 or more types present      points = 3 3 types present                    points = 2 2 types present                    points = 1	2
H 1.3 <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (Different patches of the same species can be combined to meet the size threshold.) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.		
If you counted:	> 19 species      points = 2 5 - 19 species    points = 1 <5 species        points = 0	
List species below if you want to:		

H 1.4 <u>Interspersion of habitats</u> (see p. 76) Decide from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.		
		2
NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".		
H 1.5 <u>Special Habitat Features</u> : (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.		
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (diameter at bottom >4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m) <input checked="" type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present <input checked="" type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants		
<b>H 1. TOTAL Score</b> – potential for providing habitat Add the scores in the column above		11

Comments:

<p><b>H 2. Does the wetland have the opportunity to provide habitat for many species?</b></p> <p><b>H 2.1 Buffers (see p. 80)</b>  <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer. <b>Points = 5</b>  <b>(relatively undisturbed also means no grazing)</b></p> <p><input checked="" type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;50% circumference. <b>Points = 4</b></p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. <b>Points = 4</b></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. <b>Points = 3</b></p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. <b>Points = 3</b></p> <p><b>If buffer does not meet any of the three criteria above</b></p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing or lawns are OK. <b>Points = 2</b></p> <p><input type="checkbox"/> Heavy grazing in buffer. <b>Points = 1</b></p> <p><input type="checkbox"/> Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) <b>Points = 0</b></p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above. <b>Points = 1</b></p> <p><b>H 2.2 Corridors and Connections (see p. 81)</b></p> <p><b>H 2.2.1</b> Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).  <input checked="" type="checkbox"/> <b>YES = 4 points (go to H 2.3)</b>    <input type="checkbox"/> <b>NO = go to H 2.2.2</b></p> <p><b>H 2.2.2</b> Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?  <input type="checkbox"/> <b>YES = 2 points (go to H 2.3)</b>    <input type="checkbox"/> <b>NO = H 2.2.3</b></p> <p><b>H 2.2.3</b> Is the wetland:  within 5 mi (8km) of a brackish or salt water estuary <b>OR</b>  within 3 mi of a large field or pasture (&gt;40 acres) <b>OR</b>  within 1 mi of a lake greater than 20 acres?  <input type="checkbox"/> <b>YES = 1 point</b>    <input type="checkbox"/> <b>NO = 0 points</b></p>	<p style="text-align: right;">4</p>
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<p><b>H 2.3</b> Near or adjacent to other priority habitats listed by WDFW (see p. 82) Which of the following priority habitats are within 330ft (100m) of the wetland? (see text for a more detailed description of these priority habitats)</p> <p><input type="checkbox"/> <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</p> <p><input type="checkbox"/> <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> <b>Old-growth forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</p> <p><input type="checkbox"/> <b>Mature forests:</b> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> <b>Prairies:</b> Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</p> <p><input type="checkbox"/> <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> <b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages</p> <p><input type="checkbox"/> <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p><input type="checkbox"/> <b>Urban Natural Open Space:</b> A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p><input type="checkbox"/> <b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5‰ during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p><input type="checkbox"/> <b>Marine/Estuarine Shorelines:</b> Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).</p> <p style="text-align: right;">No habitats = 0 points  If wetland has 3 or more priority habitats = 4 points  If wetland has 2 priority habitats = 3 points  If wetland has 1 priority habitat = 1 point</p>	
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<p>H 2.4 <u>Wetland Landscape</u> (choose the <b>one</b> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile. points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile. points = 0</p>	<b>5</b>
<b>H 2. TOTAL Score</b> -opportunity for providing habitat <i>Add the scores in the column above</i>	<b>13</b>
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	<b>24</b>

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

*Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.*

<b>Wetland Type</b>	<b>Category</b>
<p><i>Check off any criteria that apply to the wetland. Select the appropriate Category (from dropdown menu in Category column) when the appropriate criteria are met</i></p> <p><b>SC 1.0 Estuarine wetlands</b> (see p. 86)</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1      <input checked="" type="checkbox"/> NO</p>	
<p><b>SC 1.1</b> Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p><input type="checkbox"/> YES = Category I      <input checked="" type="checkbox"/> NO go to SC 1.2</p>	
<p><b>SC 1.2</b> Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	



<p><b>SC 2.0 Natural Heritage Wetlands (see p. 87)</b>          Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)          S/T/R information from Appendix D <input checked="" type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/></p> <p>YES <input type="checkbox"/> – contact WNHP/DNR (see p. 79) and go to SC 2.2      NO <input checked="" type="checkbox"/></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?  <input type="checkbox"/> YES = Category I      <input type="checkbox"/> NO</p>	
<p><b>SC 3.0 Bogs (see p. 87)</b>          Does the wetland (or part of the wetland) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)          Yes <input type="checkbox"/> - go to Q. 3      No <input checked="" type="checkbox"/> go to Q. 2</p> <p>2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?          Yes <input type="checkbox"/> - go to Q. 3      No <input checked="" type="checkbox"/> - Is not a bog for purpose of rating</p> <p>3. Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?          Yes <input type="checkbox"/> - Is a bog for purpose of rating      No <input type="checkbox"/> - go to Q. 4          NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</p> <p>4. Is the wetland forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?          YES <input type="checkbox"/> = Category I      NO <input type="checkbox"/> Is not a bog for purpose of rating</p>	

<p><b>SC 4.0 Forested Wetlands (see p. 90)</b>          Does the wetland have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife’s forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> <b>Old-growth forests:</b> (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and “OR” so old-growth forests do not necessarily have to have trees of this diameter.</p> <p><input type="checkbox"/> <b>Mature forests:</b> (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.  <input type="checkbox"/> YES = Category I      <input checked="" type="checkbox"/> NO</p>	
<p><b>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</b>          Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)  <input type="checkbox"/> YES = Go to SC 5.1      NO <input checked="" type="checkbox"/> not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)          YES <input type="checkbox"/> = Category I      NO <input type="checkbox"/> = Category II</p>	

**SC 6.0 Interdunal Wetlands** (see p. 93)

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?

YES = Go to SC 6.1                       NO -- not an interdunal wetland

*If you answer yes you will still need to rate the wetland based on its functions.*

In practical terms that means the following geographic areas:

- Long Beach Peninsula -- lands west of SR103
- Grayland-Westport- lands west of SR 105
- Ocean Shores-Copalis- lands west of SR 115 and SR 109

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

YES = Category II                       NO go to SC 6.2

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre,?

YES = Category III

**Category of wetland based on Special Characteristics**

*Choose the "highest" rating if wetland falls into several categories, and record on p. 1.*

If you answered NO for all types enter "Not Applicable" on p. 1.

N/A

**DRAFT WETLAND RATING FORM – WESTERN WASHINGTON**

Name of wetland (if known): Wetland C - Weyerhaeuser Real Estate Development Company

Location: SEC: 6 TOWNSHIP: 9N RANGE: 1E, W.M.  
(attach map with outline of wetland to rating form)

Person(s) Rating Wetland: T. Haderly Affiliation: Ecological Land Services, Inc.  
Date of site visit: January 2005

DRAFT SUMMARY OF RATING			
<b>Category based on FUNCTIONS provided by wetland</b>			
I <input type="checkbox"/>	II <input type="checkbox"/>	III <input checked="" type="checkbox"/>	IV <input type="checkbox"/>
Category I = Score >70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Score for Water Quality Functions	18	
	Score for Hydrologic Functions	10	
	Score for Habitat Functions	19	
	<b>TOTAL Score for functions</b>	<b>47</b>	
<b>Category based on SPECIAL CHARACTERISTICS of wetland</b>			
I <input type="checkbox"/>	II <input type="checkbox"/>	Does not Apply <input checked="" type="checkbox"/>	
<b>Final Category</b> (choose the "highest" category from above)			III

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	X
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	X		

**Does the wetland being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Unknown
SP2. <i>Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		Unknown
SP3. <i>Does the wetland contain individuals of Priority species listed by the WDFW for the state?</i>		Unknown
SP4. <i>Does the wetland have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.</i>		Unknown

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

fication. Estuarine wetlands were categorized separately  
 ion is being kept in this revision. To maintain consistency  
 ' wetland is kept. Please note, however, that the  
 and II estuarine wetlands have changed (see pp. 6 and 9).

precipitation is only source (>90%) of water to it  
 and class is **Flats**

' wetland, use the form for **Depressional** wetlands.

criteria?  
 d is on the shores of a body of open water (without any  
 e at least 20 acres (8 ha) are permanently inundated

area is deeper than 6.6 ft (2 m)?

class is **Lake-fringe (Lacustrine Fringe)**

riteria?

wetland boundary. Use the following table to identify the appropriate class to use for the rating system  
 if you have several HGM classes present within your wetland. NOTE: Use this table only if the class  
 that is recommended in the second column represents 10% or more of the total area of the wetland  
 being rated. If the area of the second class is less than 10% classify the wetland using the first class.

<i>HGM Classes Within a Delineated Wetland Boundary</i>	<i>Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or you have more

D Depressional and Flats Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 38)	
D	D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet points = 3 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland has an unconstricted surface outlet points = 1 Wetland is flat and has no obvious outlet and/or outlet is a ditch points = 1	2
D	D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES points = 4 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest class): Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0	
D	D 1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 NOTE: See text for indicators of seasonal and permanent inundation.	2
D	<b>Total for D 1</b> Add the points in the boxes above	9
D	D 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 44) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input checked="" type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
D	<b>TOTAL - Water Quality Functions</b> Multiply the score from D1 by D2 Add score to table on p. 1	18

D Depressional and Flats Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
D	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 46)	
D	D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet points = 4 Wetland has an intermittently flowing, or highly constricted, outlet points = 2 Wetland is flat and has no obvious outlet and/or outlet is a small ditch points = 1 Wetland has an unconstricted surface outlet points = 0	2
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet</i> Marks of ponding are 3 ft or more above the surface points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft to < 3 ft from surface points = 5 Marks are at least 0.5 ft to < 2 ft from surface points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	0
D	D 3.3 Contribution of wetland to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland itself.</i> The area of the basin is less than 10 times the area of wetland points = 5 The area of the basin is 10 to 100 times the area of the wetland points = 3 The area of the basin is more than 100 times the area of the wetland points = 0 Wetland is in the FLATS class (basin = the wetland, by definition) points = 5	3
D	<b>Total for D 3</b> Add the points in the boxes above	5
D	D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 49) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides, helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater. <i>Note which of the following indicators of opportunity apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	10

R Riverine and Freshwater Tidal Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
R	R 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 50)	
R	R 1.1 Area of surface depressions within the riverine wetland that can sediments during a flooding event: Depressions cover > 3/4 area of wetland points = 4 Depressions cover > 1/2 area of wetland points = 2 Depressions present but cover < 1/2 area of wetland points = 0 No depressions present	
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland points = 8 Forest or shrub > 1/3 area of the wetland points = 6 Ungrazed, emergent plants > 2/3 area of wetland points = 6 Ungrazed, emergent plants > 1/3 area of wetland points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland points = 0	
R	<i>Add the points in the boxes above</i>	
R	R 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 53) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants.</i> <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
R	<b>TOTAL - Water Quality Functions</b> Multiply the score from R1 by R2 <i>Add score to table on p. 1</i>	

Comments

R Riverine and Freshwater Tidal Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
R	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 54)	
R	R 3.1 Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).</i> If the ratio is more than 20 points = 9 If the ratio is between 10-20 points = 6 If the ratio is 5- <10 points = 4 If the ratio is 1- <5 points = 2 If the ration is <1 points = 1	
R	R 3.2 Characteristics vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.</i> Forest or shrub for > 1/3 area OR Emergent plants > 2/3 area points = 7 Forest or shrub > 1/10 area OR Emergent plants > 1/3 area points = 4 Vegetation does not meet above criteria points = 0	
R	<i>Add the points in the boxes above</i>	
R	R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 57) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. <input type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding <input type="checkbox"/> Other _____ <i>(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike.)</i> <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
R	<b>TOTAL - Hydrologic Functions</b> Multiply the score from R3 by R4 <i>Add score to table on p. 1</i>	

Comments

L Lake-Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
L	L 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 59)	
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide Vegetation is more than 16 (5m) wide and <33ft Vegetation is more than 6ft (2m) wide and <16 ft Vegetation is less than 6 ft wide	points = 6 points = 3 points = 1 points = 0
L	L 1.2 Characteristics of the vegetation in the wetland: <i>choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. In this case the herbaceous plants can be either the dominant form (called emergent class) or as an understory in a shrub or forest community.</i> Herbaceous plants cover >90% of the vegetated area Herbaceous plants cover >2/3 of the vegetated area Herbaceous plants cover >1/3 of the vegetated area Other vegetation that is not aquatic bed in > 2/3 vegetated area Other vegetation that is not aquatic bed in > 1/3 vegetated area Aquatic bed cover > 2/3 of the vegetated area	points = 6 points = 4 points = 3 points = 3 points = 1 points = 0
L	Add the points in the boxes above	
L	L 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 61) Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. <i>Note which of the following conditions provide the sources of pollutants.</i> <input type="checkbox"/> Wetland is along the shores of a lake or reservoir that does not meet water quality standards <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Polluted water discharges to wetland along upland edge <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> Residential or urban areas are within 150 ft of wetland <input type="checkbox"/> Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) <input type="checkbox"/> Power boats with gasoline or diesel engines use the lake <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
L	<b>TOTAL - Water Quality Functions</b> Multiply the score from L1 by L2 <i>Add score to table on p. 1</i>	

Comments

L Lake-Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
L	L 3. Does the wetland have the <u>potential</u> to reduce shoreline erosion? (see p. 62)	
L	L 3 Average width and characteristics of vegetation along the lakeshore (do not include aquatic bed): <i>(choose the highest scoring description that matches conditions in the wetland):</i> >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide >¼ of fringe vegetation is shrubs or trees at least 6 ft. (2m) wide >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide Fringe vegetation is at least 6 ft (2m) wide Fringe vegetation is less than 6 ft (2m) wide	points = 6 points = 4 points = 4 points = 2 points = 0
L	Record the points from the box above	
L	L 4. Does the wetland have the <u>opportunity</u> to reduce erosion? (see p. 63) Are there features along the shore which will be impacted if the shoreline erodes? <i>Note which of the following conditions apply.</i> <input type="checkbox"/> There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. <input type="checkbox"/> There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other than wetland) that can be damaged by shoreline erosion <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
L	<b>TOTAL - Hydrologic Functions</b> Multiply the score from L 3 by L 4 <i>Add score to table on p. 1</i>	

Comments

S Slope Wetlands		Points
<b>WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality</b>		
S	S 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 64)	
S	S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) ..... points = 3 Slope is 1% - 2% ..... points = 2 Slope is 2% - 5% ..... points = 1 Slope is greater than 5% ..... points = 0	
S	S 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES = 3 points      NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that traps sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface. Dense, ungrazed, herbaceous vegetation > 90% of area ..... points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of area ..... points = 3 Dense, woody vegetation > 1/2 of area ..... points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of area ..... points = 1 Does not meet any of the criteria above for vegetation ..... points = 0	
Total for S 1		Add the points in the boxes above
S	S 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 67) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input checked="" type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> Residential, urban areas, or golf courses are within 150 ft upslope of wetland <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
S	<b>TOTAL - Water Quality Functions</b> Multiply the score from S1 by S2 Add score to table on p. 1	

Comments

S Slope Wetlands		Points
<b>HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion</b>		
S	S 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 68)	
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. Dense, uncut, rigid vegetation covers >90% of area of the wetland. (Stems of plants should be thick enough (usually >1/8 in), or dense enough, to remain erect during surface flows) ..... points = 6 Dense, uncut, rigid vegetation >1/2 area of wetland ..... points = 3 Dense, uncut, rigid vegetation >1/4 area of wetland ..... points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid ..... points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES ..... points = 1 NO ..... points = 0	
		Add the points in the boxes above
S	S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 70) Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. <input type="checkbox"/> Wetland has surface runoff that drains to a river or stream that has flooding problems <input type="checkbox"/> Other _____ Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam.) <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	

Comments



These questions apply to wetlands of all HGM classes		Points									
<b>HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat</b>											
<b>H 1. Does the wetland have the potential to provide habitat for many species?</b>											
<b>H 1.1 Vegetation structure (see p. 72)</b>											
Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.											
<input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover) <input type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)											
Add the number of vegetation types that qualify. If you have:											
<table border="0"> <tr> <td>4 types or more</td> <td>points = 4</td> </tr> <tr> <td>3 types</td> <td>points = 2</td> </tr> <tr> <td>2 types</td> <td>points = 1</td> </tr> <tr> <td>1 type</td> <td>points = 0</td> </tr> </table>			4 types or more	points = 4	3 types	points = 2	2 types	points = 1	1 type	points = 0	
4 types or more	points = 4										
3 types	points = 2										
2 types	points = 1										
1 type	points = 0										
<b>H 1.2 Hydroperiods (see p. 73)</b>											
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (See text for description of hydroperiods.)											
<input type="checkbox"/> Permanently flooded or inundated      4 or more types present      points = 3 <input checked="" type="checkbox"/> Seasonally flooded or inundated      3 types present      points = 2 <input checked="" type="checkbox"/> Occasionally flooded or inundated      2 types present      points = 1 <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points											
<b>H 1.3 Richness of Plant Species (see p. 75)</b>											
Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (Different patches of the same species can be combined to meet the size threshold.)											
You do not have to name the species.											
Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.											
<table border="0"> <tr> <td>If you counted:</td> <td>&gt; 19 species</td> <td>points = 2</td> </tr> <tr> <td></td> <td>5 - 19 species</td> <td>points = 1</td> </tr> <tr> <td></td> <td>&lt;5 species</td> <td>points = 0</td> </tr> </table>			If you counted:	> 19 species	points = 2		5 - 19 species	points = 1		<5 species	points = 0
If you counted:	> 19 species	points = 2									
	5 - 19 species	points = 1									
	<5 species	points = 0									
List species below if you want to:											

<b>H 1.4 Interspersion of habitats (see p. 76)</b>		
Decide from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.		
NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".		
<b>H 1.5 Special Habitat Features: (see p. 77)</b>		
Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.		
<input type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input type="checkbox"/> Standing snags (diameter at bottom >4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present <input checked="" type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants		
<b>H 1. TOTAL Score – potential for providing habitat</b>		<b>8</b>
Add the scores in the column above		
<b>Comments:</b>		

<p><b>H 2. Does the wetland have the opportunity to provide habitat for many species?)</b></p> <p><b>H 2.1 Buffers (see p. 80)</b>  <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer. Points = 5</p> <p><input checked="" type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;50% circumference. Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. Points = 3</p> <p><b>If buffer does not meet any of the three criteria above</b></p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for &gt;50% circumference. Points = 2</p> <p><input type="checkbox"/> Light to moderate grazing or lawns are OK. Points = 1</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 0</p> <p><input type="checkbox"/> Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) Points = 1</p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above.</p>	<p><b>H 2.2 Corridors and Connections (see p. 81)</b></p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p><input checked="" type="checkbox"/> YES = 4 points (go to H 2.3) <input type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</b></p> <p><input type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:  within 5 mi (8km) of a brackish or salt water estuary OR  within 3 mi of a large field or pasture (&gt;40 acres) OR  within 1 mi of a lake greater than 20 acres?</p> <p><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>
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<p><b>H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)</b>  Which of the following priority habitats are within 330ft (100m) of the wetland? (see text for a more detailed description of these priority habitats)</p> <p><b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</p> <p><input type="checkbox"/> <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> <b>Old-growth forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</p> <p><input type="checkbox"/> <b>Mature forests:</b> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> <b>Prairies:</b> Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</p> <p><input type="checkbox"/> <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p><input type="checkbox"/> <b>Urban Natural Open Space:</b> A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p><input type="checkbox"/> <b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5‰ during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p><input type="checkbox"/> <b>Marine/Estuarine Shorelines:</b> Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).</p> <p>If wetland has 3 or more priority habitats = 4 points  If wetland has 2 priority habitats = 3 points  If wetland has 1 priority habitat = 1 point  No habitats = 0 points</p>	<p>0</p>
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<p>H 2.4 <u>Wetland Landscape</u> (choose the one description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile. points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile. points = 0</p>	3
<p>H 2. TOTAL Score -opportunity for providing habitat Add the scores in the column above</p>	11
<p><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1</p>	19

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

Wetland Type	Category
<p>Check off any criteria that apply to the wetland. Select the appropriate Category (from dropdown menu in Category column) when the appropriate criteria are met.</p> <p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1      <input checked="" type="checkbox"/> NO</p>	
<p>SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p><input type="checkbox"/> YES = Category I      <input checked="" type="checkbox"/> NO go to SC 1.2</p>	
<p>SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	



<p><b>SC 6.0 Interdunal Wetlands (see p. 93)</b>  Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?  <input type="checkbox"/> YES = Go to SC 6.1    <input checked="" type="checkbox"/> NO -- not an interdunal wetland  <i>If you answer yes you will still need to rate the wetland based on its functions.</i>  In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula – lands west of SR 103</li> <li>• Grayland-Westport- lands west of SR 105</li> <li>• Ocean Shores-Copallis- lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?  <input type="checkbox"/> YES = Category II    <input type="checkbox"/> NO go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre,?  <input type="checkbox"/> YES = Category III</p>	
<p><b>Category of wetland based on Special Characteristics</b>  Choose the "highest" rating if wetland falls into several categories, and record on p. 1.  If you answered NO for all types enter "Not Applicable" on p. 1.</p>	<p>N/A</p>

**DRAFT WETLAND RATING FORM – WESTERN WASHINGTON**

Name of wetland (if known): Wetland D, E, F - Weyerhaeuser Real Estate Development Co.

Location: SEC: 31 TWSHP: 10N RNGE: 1E, W.M.  
 (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: T. Haderly Affiliation: Ecological Land Services, Inc.  
 Date of site visit: January 2005

DRAFT SUMMARY OF RATING		
<b>Category based on FUNCTIONS provided by wetland</b>		
I ___ II ___ III <u>X</u> IV ___		
Category I = Score >70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Score for Water Quality Functions	8
	Score for Hydrologic Functions	9
	Score for Habitat Functions	16
	<b>TOTAL Score for functions</b>	<b>33</b>
<b>Category based on SPECIAL CHARACTERISTICS of wetland</b>		
I ___ II ___ Does not Apply <u>X</u>		
<b>Final Category</b> (choose the "highest" category from above)		III

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine		Depressional	X
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	X		

**Does the wetland being rated meet any of the criteria below?**

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Unknown
SP2. <i>Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		Unknown
SP3. <i>Does the wetland contain individuals of Priority species listed by the WDFW for the state?</i>		Unknown
SP4. <i>Does the wetland have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.</i>		Unknown

*To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.*

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

## Classification of Vegetated Wetlands for Western Washington

Wetland Name: Wetland D, E, F - WREDC Date: January 2006

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO – go to 2     YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?  YES – **Freshwater Tidal Fringe**  NO – **Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see pp. 6 and 9).*

2. Is the topography within the wetland flat and precipitation is only source (>90%) of water to it.

NO – go to 3     YES – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the wetland **meet both** of the following criteria?

- The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
- At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO – go to 4     YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the wetland **meet all** of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- The water leaves the wetland **without being impounded?**

*NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*

NO – go to 5     YES – The wetland class is **Slope**

5. Is the wetland in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river? The flooding should occur at least once every two years, on the average, to answer "yes." *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO – go to 6     YES – The wetland class is **Riverine**

6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7     YES – The wetland class is **Depressional**

7. Is the wetland located in a very flat area with no obvious depression and no stream or river running through it and providing water. The wetland seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8     YES – The wetland class is **Depressional**

8. Your wetland seems to be difficult to classify. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland being rated. If the area of the second class is less than 10% classify the wetland using the first class.

HGM Classes Within a Delineated Wetland Boundary	Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Depressional and Flats Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 38)		
D 1.1 Characteristics of surface water flows out of the wetland: Wetland is a depression with no surface water outlet Wetland has an intermittently flowing, or highly constricted, outlet Wetland has an unconstricted surface outlet Wetland is flat and has no obvious outlet and/or outlet is a ditch	points = 3 points = 2 points = 1 points = 1	3
D 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES NO	points = 4 points = 0	0
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest class): Wetland has persistent, ungrazed, vegetation > = 95% of area Wetland has persistent, ungrazed, vegetation > = 1/2 of area Wetland has persistent, ungrazed vegetation > = 1/10 of area Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 5 points = 3 points = 1 points = 0	5
D 1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> Area seasonally ponded is > 1/2 total area of wetland Area seasonally ponded is > 1/4 total area of wetland Area seasonally ponded is < 1/4 total area of wetland NOTE: See text for indicators of seasonal and permanent inundation.	points = 4 points = 2 points = 0	0
Total for D 1 <i>Add the points in the boxes above</i>		8
D 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 44) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants.		
<input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____		multiplier
<input type="checkbox"/> YES multiplier is 2 <input checked="" type="checkbox"/> NO multiplier is 1		1
TOTAL - Water Quality Functions    Multiply the score from D1 by D2		

D Depressional and Flats Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 46)		
D 3.1 Characteristics of surface water flows out of the wetland Wetland has no surface water outlet Wetland has an intermittently flowing, or highly constricted, outlet Wetland is flat and has no obvious outlet and/or outlet is a small ditch Wetland has an unconstricted surface outlet	points = 4 points = 2 points = 1 points = 0	
D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet</i> Marks of ponding are 3 ft or more above the surface The wetland is a "headwater" wetland Marks of ponding between 2 ft to < 3 ft from surface Marks are at least 0.5 ft to < 2 ft from surface Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft	points = 7 points = 5 points = 5 points = 3 points = 1 points = 0	0
D 3.3 Contribution of wetland to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland itself.</i> The area of the basin is less than 10 times the area of wetland The area of the basin is 10 to 100 times the area of the wetland The area of the basin is more than 100 times the area of the wetland Wetland is in the FLATS class (basin = the wetland, by definition)	points = 5 points = 3 points = 0 points = 5	5
D Total for D 3 <i>Add the points in the boxes above</i>		9
D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 49) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides, helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater. <i>Note which of the following indicators of opportunity apply.</i>		
<input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____		multiplier
<input type="checkbox"/> YES multiplier is 2 <input checked="" type="checkbox"/> NO multiplier is 1		
D TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i>		



R Riverine and Freshwater Tidal Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
R	R 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 50)	
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: Depressions cover > 3/4 area of wetland points = 8 Depressions cover > 1/2 area of wetland points = 4 Depressions present but cover < 1/2 area of wetland points = 2 No depressions present points = 0	
R	R 1.2 Characteristics of the vegetation in the wetland: Forest or shrub > 2/3 the area of the wetland points = 8 Forest or shrub > 1/3 area of the wetland points = 6 Ungrazed, emergent plants > 2/3 area of wetland points = 6 Ungrazed, emergent plants > 1/3 area of wetland points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland points = 0	
R	<i>Add the points in the boxes above</i>	
R	R 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 53) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants.</i> <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
R	<b>TOTAL - Water Quality Functions</b> Multiply the score from R1 by R2 <i>Add score to table on p. 1</i>	
Comments		

R Riverine and Freshwater Tidal Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
R	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 54)	
R	R 3.1 Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).</i> If the ratio is more than 20 points = 9 If the ratio is between 10-20 points = 6 If the ratio is 5- <10 points = 4 If the ratio is 1- <5 points = 2 If the ratio is <1 points = 1	
R	R 3.2 Characteristics vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.</i> Forest or shrub for >1/3 area OR Emergent plants >2/3 area points = 7 Forest or shrub > 1/10 area OR Emergent plants >1/3 area points = 4 Vegetation does not meet above criteria points = 0	
R	<i>Add the points in the boxes above</i>	
R	R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 57) Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. <input type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding <input type="checkbox"/> Other _____ <i>(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike.)</i> <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
R	<b>TOTAL - Hydrologic Functions</b> Multiply the score from R3 by R4 <i>Add score to table on p. 1</i>	
Comments		

L Lake-Fringe Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
L	L 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 59)	
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide points = 6 Vegetation is more than 16 (5m) wide and <33ft points = 3 Vegetation is more than 6ft (2m) wide and <16 ft points = 1 Vegetation is less than 6 ft wide points = 0	
L	L 1.2 Characteristics of the vegetation in the wetland: <i>choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. In this case the herbaceous plants can be either the dominant form (called emergent class) or as an understory in a shrub or forest community.</i> Herbaceous plants cover >90% of the vegetated area points = 6 Herbaceous plants cover >2/3 of the vegetated area points = 4 Herbaceous plants cover >1/3 of the vegetated area points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed cover > 2/3 of the vegetated area points = 0	
L	Add the points in the boxes above	
L	L 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 61) Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. <i>Note which of the following conditions provide the sources of pollutants.</i> <input type="checkbox"/> Wetland is along the shores of a lake or reservoir that does not meet water quality standards <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Polluted water discharges to wetland along upland edge <input checked="" type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> Residential or urban areas are within 150 ft of wetland <input type="checkbox"/> Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore) <input type="checkbox"/> Power boats with gasoline or diesel engines use the lake <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
L	<b>TOTAL - Water Quality Functions</b> Multiply the score from L1 by L2 Add score to table on p. 1	

Comments

L Lake-Fringe Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
L	L 3. Does the wetland have the <u>potential</u> to reduce shoreline erosion? (see p. 62)	
L	L 3 Average width and characteristics of vegetation along the lakeshore (do not include aquatic bed): (choose the highest scoring description that matches conditions in the wetland): >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m wide) points = 6 >¼ of fringe vegetation is shrubs or trees at least 6 ft (2m) wide points = 4 >¼ of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 4 Fringe vegetation is at least 6 ft (2m) wide points = 2 Fringe vegetation is less than 6 ft (2m) wide points = 0	
L	Record the points from the box above	
L	L 4. Does the wetland have the <u>opportunity</u> to reduce erosion? (see p. 63) Are there features along the shore which will be impacted if the shoreline erodes? Note which of the following conditions apply. <input type="checkbox"/> There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. <input type="checkbox"/> There are undisturbed natural resources along the upland edge of the wetland (e.g. mature forests other than wetland) that can be damaged by shoreline erosion <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier
L	<b>TOTAL - Hydrologic Functions</b> Multiply the score from L 3 by L 4 Add score to table on p. 1	

Comments

S Slope Wetlands		Points
<b>WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality</b>		
S	S 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 64)	
S	S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) ..... points = 3 Slope is 1% - 2% ..... points = 2 Slope is 2% - 5% ..... points = 1 Slope is greater than 5% ..... points = 0	
S	S 1.2 The soil 2 inches below the surface is clay, organic, or smells anoxic (hydrogen sulfide or rotten eggs). YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that traps sediments and pollutants: Choose the points appropriate for the <i>description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface.</i> Dense, ungrazed, herbaceous vegetation > 90% of area ..... points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of area ..... points = 3 Dense, woody vegetation > 1/2 of area ..... points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of area ..... points = 1 Does not meet any of the criteria above for vegetation ..... points = 0	
S	Total for S 1 ..... Add the points in the boxes above	
S	S 2. Does the wetland have the <u>opportunity</u> to improve water quality? (see p. 67) Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 feet of wetland <input type="checkbox"/> Residential, urban areas, or golf courses are within 150 ft upslope of wetland <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
S	<b>TOTAL - Water Quality Functions</b> Multiply the score from S1 by S2 Add score to table on p. 1	

Comments

S Slope Wetlands		Points
<b>HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion</b>		
S	S 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion? (see p. 68)	
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. Dense, uncut, rigid vegetation covers >90% of area of the wetland. (Stems of plants should be thick enough (usually >1/8 in), or dense enough, to remain erect during surface flows) ..... points = 6 Dense, uncut, rigid vegetation >1/2 area of wetland ..... points = 3 Dense, uncut, rigid vegetation >1/4 area of wetland ..... points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid ..... points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES ..... points = 2 NO ..... points = 0	
S	Add the points in the boxes above	
S	S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 70) Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. <input type="checkbox"/> Wetland has surface runoff that drains to a river or stream that has flooding problems <input checked="" type="checkbox"/> Other _____ Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam.) <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	multiplier _____
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	

Comments

These questions apply to wetlands of all HGM classes		Points
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat		
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?		
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as defined by Cowardin) if the class covers more than 10% of the area of the wetland or ¼ acre.		
<input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover) <input type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)		0
Add the number of vegetation types that qualify. If you have:		
	4 types or more	points = 4
	3 types	points = 2
	2 types	points = 1
	1 type	points = 0
H 1.2 <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (See text for description of hydroperiods.)		
<input type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points	4 or more types present points = 3 3 types present points = 2 2 types present points = 1	
H 1.3 <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . (Different patches of the same species can be combined to meet the size threshold.) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.		
	If you counted: > 19 species points = 2 5 - 19 species points = 1 <5 species points = 0	1
List species below if you want to:		

H 1.4 <u>Interspersion of habitats</u> (see p. 76) Decide from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.		
		0
NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".		
H 1.5 <u>Special Habitat Features</u> : (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.		
<input type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input type="checkbox"/> Standing snags (diameter at bottom >4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present <input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants		0
<b>H 1. TOTAL Score</b> – potential for providing habitat Add the scores in the column above		2

Comments:

<b>H 2. Does the wetland have the opportunity to provide habitat for many species?)</b>	
<p>H 2.1 <u>Buffers</u> (see p. 80)  Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <p><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no grazing) <b>Points = 5</b></p> <p><input type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;50% circumference. <b>Points = 4</b></p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. <b>Points = 4</b></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. <b>Points = 3</b></p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for &gt; 50% circumference. <b>Points = 3</b></p> <p><b>If buffer does not meet any of the three criteria above</b></p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b></p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing or lawns are OK. <b>Points = 2</b></p> <p><input type="checkbox"/> Heavy grazing in buffer. <b>Points = 1</b></p> <p><input type="checkbox"/> Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) <b>Points = 0</b></p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above. <b>Points = 1</b></p>	5
<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).  <input checked="" type="checkbox"/> YES = 4 points (go to H 2.3)    <input type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?  <input type="checkbox"/> YES = 2 points (go to H 2.3)    <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:  within 5 mi (8km) of a brackish or salt water estuary <b>OR</b>  within 3 mi of a large field or pasture (&gt;40 acres) <b>OR</b>  within 1 mi of a lake greater than 20 acres?  <input type="checkbox"/> YES = 1 point    <input type="checkbox"/> NO = 0 points</p>	4

<b>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82)</b>	
Which of the following priority habitats are within 330ft (100m) of the wetland? (see text for a more detailed description of these priority habitats)	
<p><input type="checkbox"/> <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</p> <p><input type="checkbox"/> <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> <b>Old-growth forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age.</p> <p><input type="checkbox"/> <b>Mature forests:</b> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> <b>Prairies:</b> Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</p> <p><input type="checkbox"/> <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> <b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages</p> <p><input type="checkbox"/> <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p><input type="checkbox"/> <b>Urban Natural Open Space:</b> A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p><input type="checkbox"/> <b>Estuary/Estuary-like:</b> Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5‰ during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p><input type="checkbox"/> <b>Marine/Estuarine Shorelines:</b> Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).  If wetland has 3 or more priority habitats = 4 points  If wetland has 2 priority habitats = 3 points  If wetland has 1 priority habitat = 1 point                      No habitats = 0 points</p>	0

<p>H 2.4 <b>Wetland Landscape</b> (choose the one description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile. points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile. points = 0</p>	5
<p><b>H 2. TOTAL Score</b> -opportunity for providing habitat Add the scores in the column above</p>	14
<p><b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1</p>	16

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

*Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.*

Wetland Type	Category
<p>Check off any criteria that apply to the wetland. Select the appropriate Category (from dropdown menu in Category column) when the appropriate criteria are met.</p> <p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1      <input checked="" type="checkbox"/> NO</p>	
<p>SC 1.1 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p><input type="checkbox"/> YES = Category I      <input checked="" type="checkbox"/> NO go to SC 1.2</p>	
<p>SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	



SC 6.0 Interdunal Wetlands (see p. 93)

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?

YES = Go to SC 6.1       NO -- not an interdunal wetland

*If you answer yes you will still need to rate the wetland based on its functions.*

In practical terms that means the following geographic areas:

- Long Beach Peninsula – lands west of SR103
- Grayland-Westport- lands west of SR 105
- Ocean Shores-Copalis- lands west of SR 115 and SR 109

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

YES = Category II       NO go to SC 6.2

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre,?

YES = Category III

**Category of wetland based on Special Characteristics**

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

N/A

If you answered NO for all types, enter "Not Applicable" on p. 1.