# **Wetland Delineation Report**

for

# Silver Lake Forest Reserve Cowlitz County, Washington

Prepared for:

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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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**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 sigh 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.

Number	Soil Series	Drainage	Hydric Soil
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	Hydric
134	Natal Silty clay loam, 0-4% slopes	Poorly Drained	Hydric
146	Olympic silt loam, 2-8% slopes	Well Drained	Not Hydric
193	Seaquest silt loam, 8-20% slopes	Well Drained	Not Hydric
194	Seaquest silt loam, 20-30% slopes	Well Drained	Not Hydric
199	Snohomish silty clay loam, 0-1% slopes	Poorly Drained	Hydric

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 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>			
A	1	I			
В	3	III			
C	3	III			
D	4a	III			
E	4a	III			
F	4a	III			

<sup>&</sup>lt;sup>a</sup> Cowlitz County wetland classification method CCC 19.15120A.

#### 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)
A	> 20	1	Snohomish silty clay loam	80
В	> 1	3	Seaquest silt loam	None (60' added for mitigation)
C	> 1	3	Natal silty clay loam	60
D	< 1	4b	(Wetland is not regulated)	None
E	< 1	4b	(Wetland is not regulated)	None
F	< 1	4b	(Wetland is not regulated)	None

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

# **Permitting Considerations**

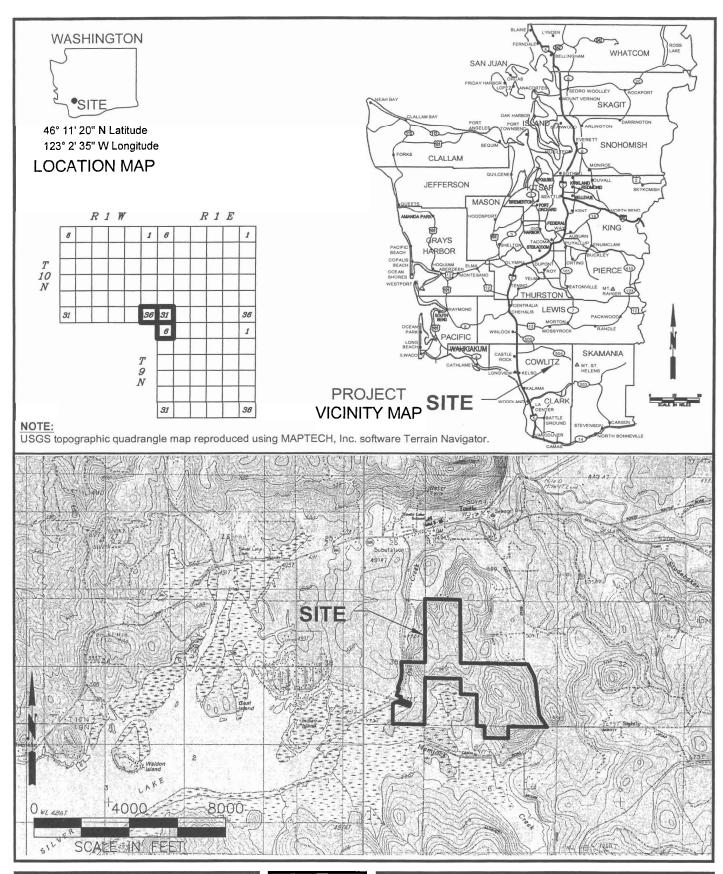
It is anticipated that the proposed Private Roadway could be completed without any new impact to wetlands. The existing road system appears to provide adequate access to the proposed lots and can be improved to County road standards without impacting wetlands. The additional new 60' wide buffer for Wetland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

- Cowlitz County. 1998. Cowlitz County Code (CCC) Critical Areas Chapter 19.15.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Waterways Experiment Station, Vicksburg, Mississippi.
- Habitat Technologies. 206. Cowlitz County Silver Lake Project Site Reconnaissance Assessment Letter Report. Revised December 5, 2005.
- Hruby, T. 2004. Washington State Wetland Rating System for Western Washington. Washington Department of Ecology Publication # 04-06-025. Olympia, Washington
- Natural Resources Conservation Service (NRCS) website. 2006. Soil Survey Maps. Online document accessed February 2006. http://www.or.nrcs.usda.gov/pnw\_soil/Washington/.html. U.S.D.A.
- Washington State Department of Ecology (WDOE). 1997. Washington State Wetlands Identification and Delineation Manual. Publication # 96-94. Olympia, Washington.
- Washington Department of Natural Resources. 2006. *Stream Typing Map*. Web site accessed February 22, 2006. http://www.dnr.wa.gov/forestpractices/watertyping/



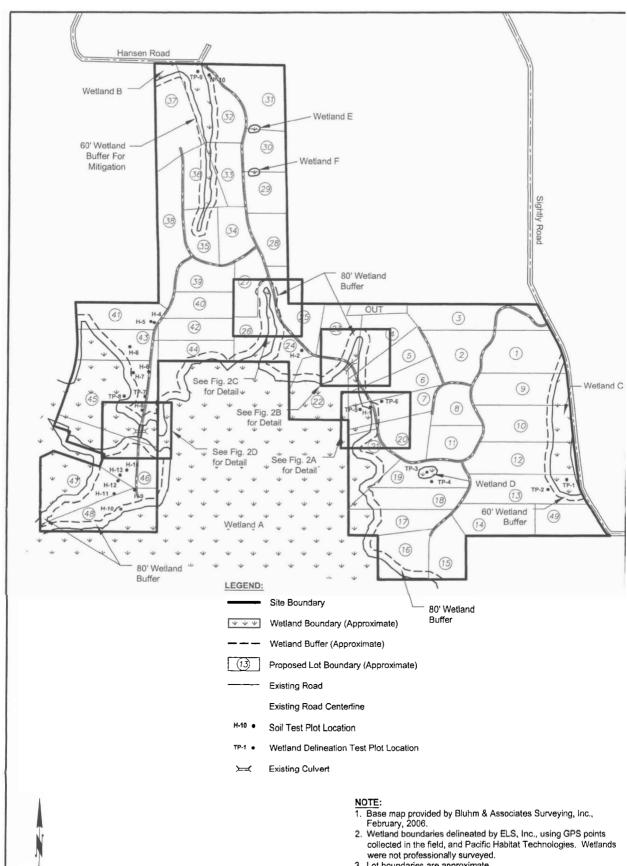
1157 3rd Ave., Suite 220 Longview, WA 98632 (360) 578-1371 Fax: (360) 414-9305 DATE <u>03-03-06</u>

DWN. <u>APF</u>

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.



3. Lot boundaries are approximate.

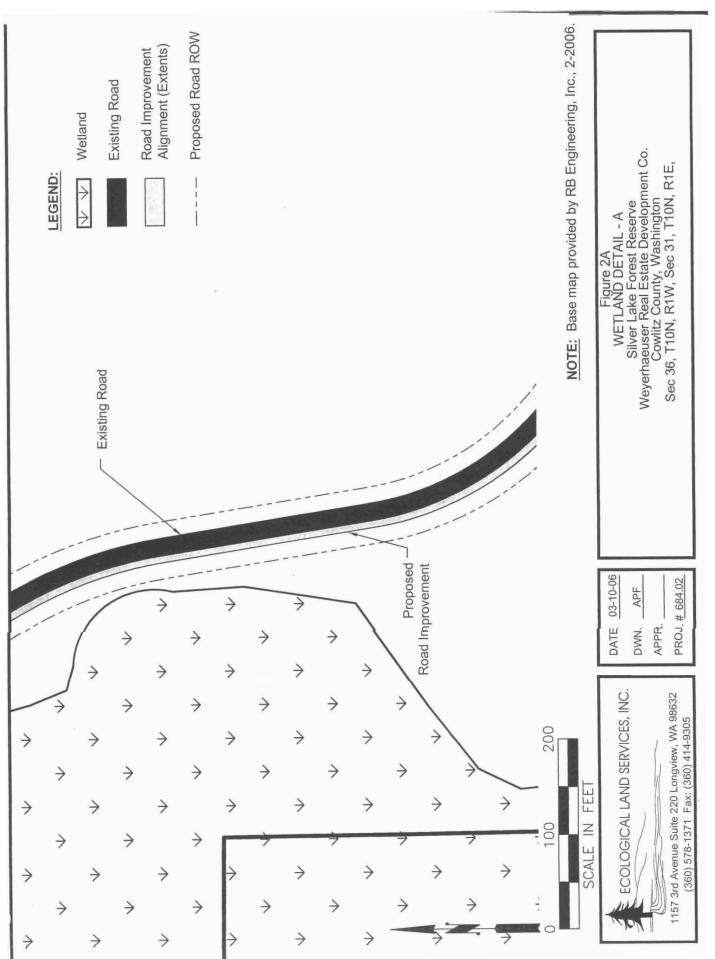


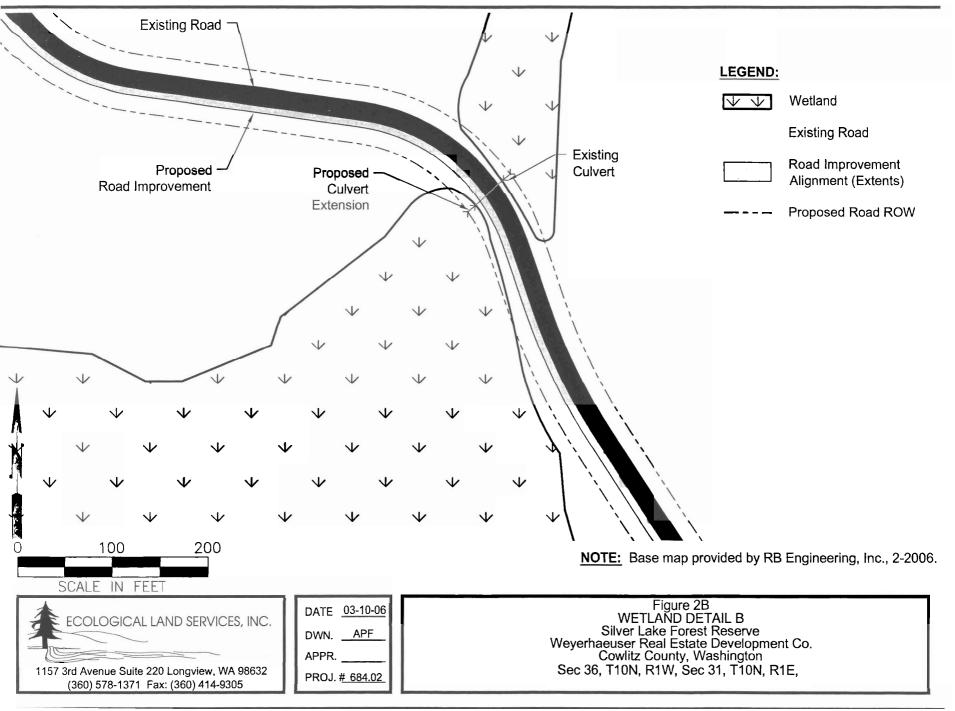
DATE 03-09-06 DWN. APF APPR.

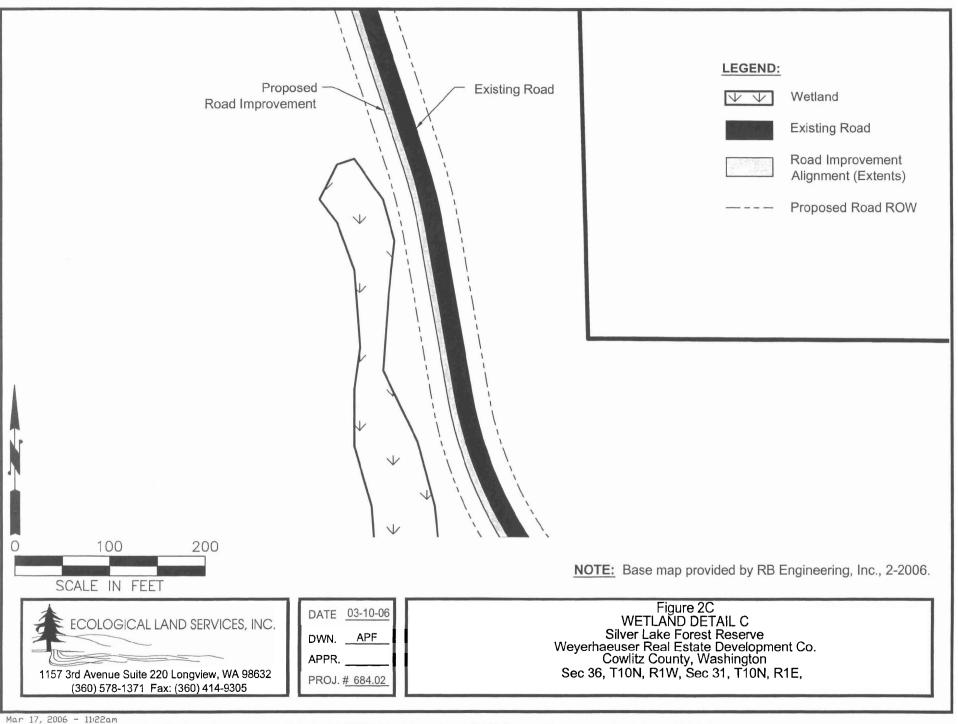
PROJ. # 684.02

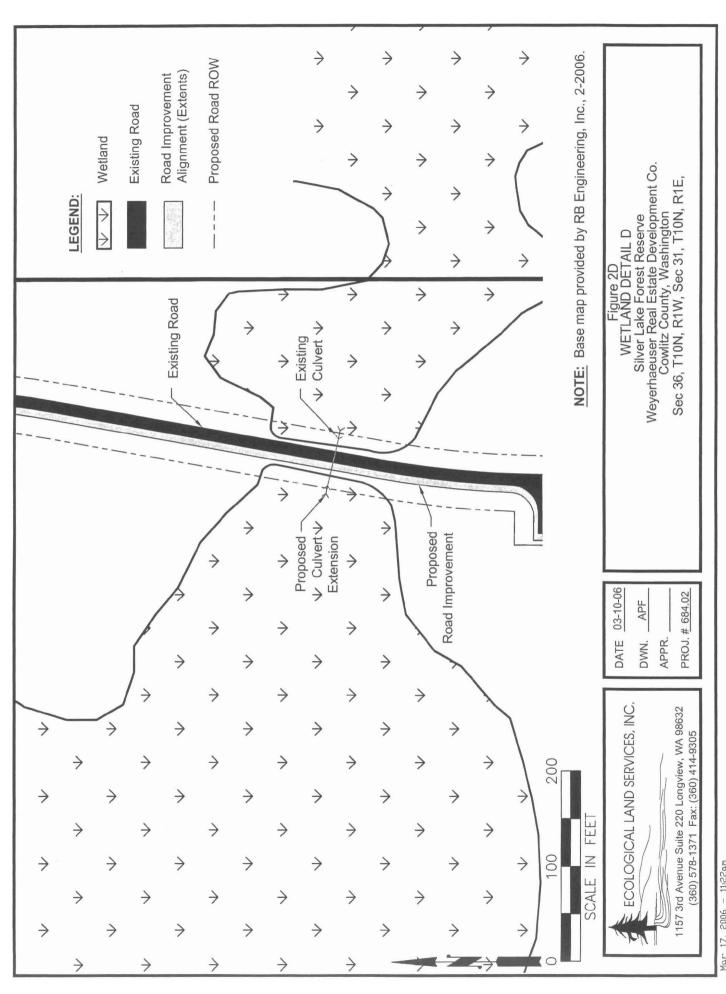
SITE MAP Silver Lake Forest Reserve Weyerhaeuser Real Estate Development Co. Cowlitz County, Washington
Sec 36, T10N, R1W, Sec 31, T10N, R1E, & Sec 6, T9N, R1E, W.M.

1157 3rd Ave., Suite 220 Longview, WA 98632 (360) 578-1371 Fax: (360) 414-9305

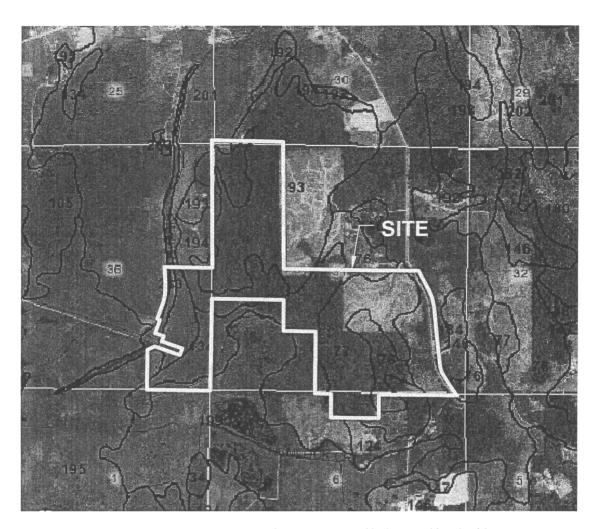








Mar 17, 2006 - 11:22am SilCowiltz-WAlCounty-Projectsi684-Weyerhaeuser Real Estate Col684,02-Silver Lake Lotsi684,02-Figuresi684,02-SM-wetland-detall-03082006.dwg



76 - Hazeldell gravely silt loam, 0-8% slopes. Non-hydric.

77 - Hazeldell gravely 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.

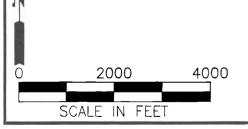
146 - Olympic silt loam, 2-8% slopes. Non-hydric.

193 - Seaguest silt loam, 8-20% slopes. Non-hydric.

194 - Seaguest 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

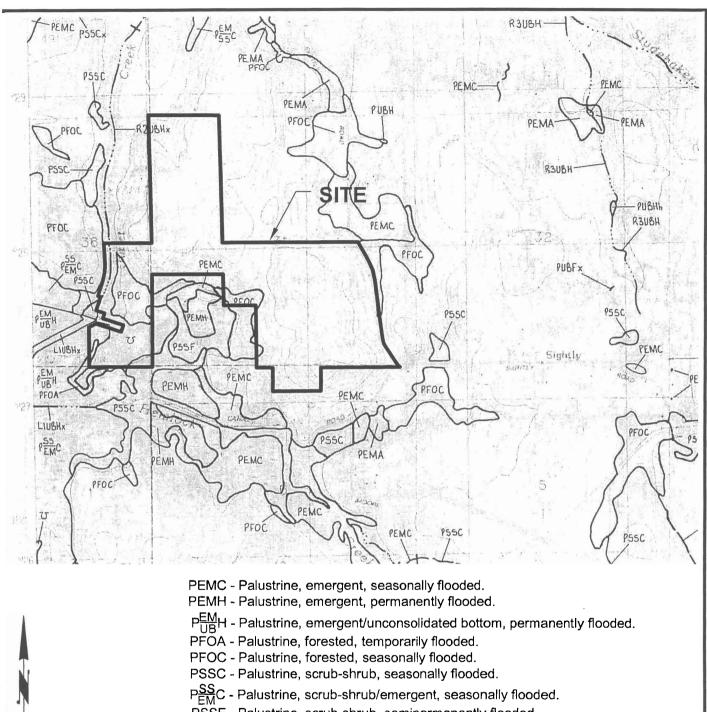
ECOLOGICAL LAND SERVICES, INC. 1157 3rd Avenue Suite 220 Longview, WA 98632 (360) 578-1371 Fax: (360) 414-9305

DATE 03-02-06

DWN. APF

APPR. 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.



PSSF - Palustrine, scrub-shrub, semipermanently flooded.

RUBHx - Riverine, unconsolidated bottom, permanently flooded, excavated.

ช - Uplands



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



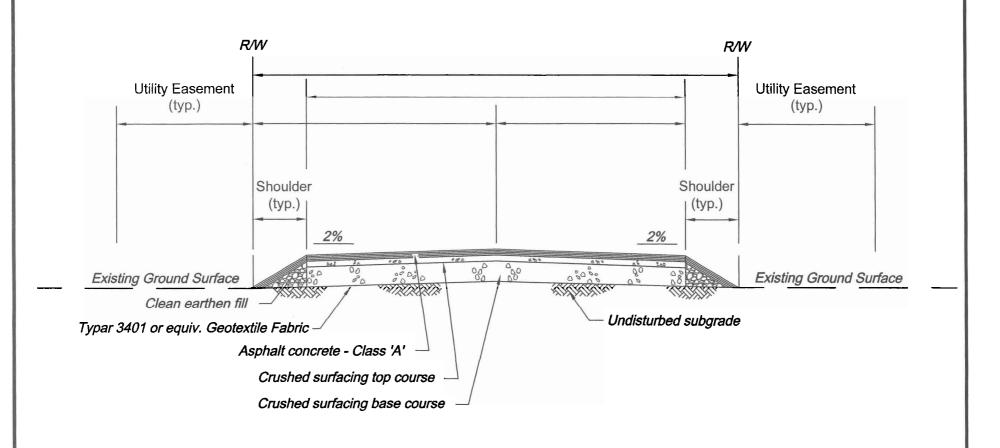
DATE 03-02-06

DWN. <u>APF</u>

APPR. \_\_\_

PROJ. # 684.02

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.





DATE	03-10-06
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PROJ.	<u># 684.02</u>

Figure 5
ROAD TYPICAL
Silver Lake Forest Reserve
Weyerhaeuser Real Estate Development Co.
Cowlitz County, Washington
Sec 36, T10N, R1W, Sec 31, T10N, R1E,



Name: Andrew Allison

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

					19	97 Wa	shington	State Del	ineation Manual		
Project Site: Silv	er Lake Fores	t Reserve		T	Date: 2/23/06				Project #: 684.0	2	
		user Real Estate Devel	opment Company		County/State: Cowlitz County, Washington						
		Sightly Road within W			Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.						
Test Flot Booking	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							,	, , , ,		
Do normal circui	mstances exis	t at the site?		I	Yes	⊠n	No	Plot II	): TP 1 wetland		
		ed (atypical situation	1)?		Yes			Comm	unity ID:		
Is the site a poten			<u>/</u>		Yes				ect ID:		
25 the offe a poten	prostem										
Dominant Plant S	(Strata: tree, Species non Name	sapling, shrub, wood	ly vine, herb)  Scientific	Nama				44.	9/ Cover Ind	licator Status	
	non Name	Pagedatas	ga menziesii	Name				trata Tree	% Cover Ind		
<ol> <li>Douglas fir*</li> <li>Red-osier dogy</li> </ol>	uand*						_	hrub	30	FACU FACW	
	v000"	Cornus sei					_	hrub	30		
3. Hardhack*		Spiraea do								FACU	
4. Sword fern	•		m munitum				_	Herb	70	FACU	
5. Reed canarygra			rundinacea				_	Herb		FACW	
6. Himalayan blad	ckberry	Rubus arm					_	Herb	10	FACU	
7. Lady fern*		Athyrium f					_	Herb	30	FAC	
8. Slough sedge Other species pres		Carex obn	иріа				1	Herb	10	OBL	
Remarks: * = do		FACW, FACW-, FAC s based on the 50/20 re		(п	nore than 50	% req	uired)	V	egetation Criteria Met?	'⊠Yes □No	
HYDROLOGY Recorded data available? Is it the growing season? Is site inundated?  Peth of surface water: epth to free water in pit: Depth to saturated soils:  NA  Remarks: Soils were damp during the ELS evaluation.						dicator ted ted < 1 Marks ines nt Dep ge Patt	<u>s</u> 2 in. osits		ydrology Indicators Secondary Indicators (  Oxidized Root Cha  Local Soil Survey Water Stained Les FAC-Neutral Test Other (Explain in	nnnels < 12in. bgs Data ives	
SOILS: Map Unit Name: (Series and Phase) Taxonomy (Subgr	Natal silty c roup): Umbr	lay loam, 0-4% slopes	(#134)			Dra	ninage Cl		Excessively Draine Somewhat Excessi Well Drained Moderately Well I Somewhat Poorly Poorly Drained Very Poorly Drain	vely Drained Drained Drained	
Depth (inches)	<u>Horizon</u>	Matrix color	Mottle Color		Mottle	Abunc	lance		Mottle Size	Texture	
					(few, cor	mmon,	many)		(fine, med, coarse)		
0-16	A	10 YR 3/1	5 Y 6/3		CC	ommon			medium	sandy clay	
second mottle	A		10 YR 5/8		CC	ommon			medium	sandy clay	
Hydric Soil Indicators  Histosol (-ists)  Histic Epipedon (8-16")  Sulfidic Odor  Aquic Moisture Regime  Remarks: Mottling.					Gleyed or Low Chroma Colors  Mg or Fe Concretions			lors	☐ Organic Streaking in Sandy Soils ☐ Organic Pans ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)		
		ON							Soils Criteria Met?	⊠Yes □No	
WETLAND DET  lydrophytic Veg  Wetland Hydrold  Hydric Soil Preso  Remarks: Wetlan	getation Dom ogy Present? ent?	inant? ⊠Yes ⊠Yes ⊠Yes	□No □No □No				Is tes	t plot wi	thin a wetland?	\  \  \  \  \  \  \  \  \  \  \  \  \  \	

Sheet <u>1</u> of <u>10</u>



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

					199	97 Washir	ngton State De	lineation Manual		
Project Site: Silver Lake Forest Reserve Date: 2/23/06 Project #: 684.02										
	County/State: Cowlitz County, Washington									
								nship 9 North, Range	I Feet WM	
Test Plot Locatio	on: West of s	signtly Road, outside	wetiand C		Sec/Town/R	ange: 30	ections o, row	nsnip 9 Norin, Kange	I East, W.M.	
<b>7</b>		4 -4 46:4-0			<b>□</b> ¥/••	Mar.	Die4 T	D. The and		
Do normal circui			\0		☐Yes ☐No Plot ID: TP 2 upland					
	<u>-</u>	oed (atypical situation	n)?		∑Yes	□ No		nunity ID:		
Is the site a poter	ntial problem	area?			Yes	⊠No	Trans	sect ID:		
		, sapling, shrub, woo	dy vine, herb)							
Dominant Plant							_			
	non Name		Scientific	Name			Strata	% Cover	Indicator Status	
1. Black cottonwe		Populus b					Tree	30	<u>FAC</u>	
2. Himalayan bla	ckberry*	Rubus arn					Herb	80	FACU	
3. Sword fern		Polystich	ım munitum				Herb	10	FACU	
4.										
5.										
6.										
<u>7.</u>										
8.										
Other species pres										
		FACW, FACW-, FAC		(me	ore than 50%	6 require	ed)			
Remarks:*=domi	inant species b	pased on the 50/20 rule	c = 1/2 = 50%				_		# .0 □ v   K21++	
								egetation Criteria N	1et? ∐Yes ⊠No	
****										
HYDROLOGY			•		<b>T</b> ()					
Recorded data av		☐ Yes ⊠ N	-		Type(s):		387 41 3 87			
Is it the growing	season?	☐ Yes ☒ N☐ Yes ☒ N		,	Du.: 7 4		Wetland F	Iydrology Indicators		
Is site inundated:	<b>'</b>	☐ Yes ⊠ N	10	Primary Indicators Secondary Indicators (2 required)  ☐ Inundated ☐ Oxidized Root Channels < 12in. bgs						
epth of surface	water	NA		l I	=	ea ed < 12 ir		☐ Oxidized Root ☐ Local Soil Surv		
epth of surface				<u> </u>	Water N		1.	☐ Water Stained		
Depth to saturate		<u>NA</u> NA		ļ	Drift Li			FAC-Neutral T		
Deput to Saturate	eu sons.	IVA		I.		nes it Deposi	te	Other (Explain		
				Ī		e Patterr		Other (Explain	in remarks)	
					Diamag	c I atteri	13	Hydrology Crit	eria Met? 🗌 Yes 🖾 No	
Remarks: No wat	ter was presen	t during the ELS evalu	ation					my dronogy com		
SOILS:						Drains	nge Class:	Excessively Dr	ained	
	Natal silty o	lay loam, 0-4% slopes	(#134)		Somewhat Excessively Drained					
(Series and Phase)			<u> </u>					Well Drained	2000, 0.7	
Taxonomy (Subg		ic Endoaqualfs		Moderately Well Drained					ell Drained	
, ( )	, , ,							Somewhat Poo		
Field observation	ns confirm ma	apped soil type?	Yes ⊠No					Poorly Drained	•	
		·· ·· —						☐ Very Poorly D		
Profile Description	on									
Depth (inches)	Horizon	Matrix color	Mottle Color		Mottle A	<u>Abundan</u>	ce	Mottle Size	Texture	
					(few, con	ımon, ma	iny)	(fine, med, coarse	2)	
0-16	A	5 YR 3/1							sandy clay loam	
Hydric Soil Indic	cators	Histosol (-ists)			Reducing Con	nditions		Organic Stream	king in Sandy Soils	
		Histic Epipedo	on (8-16")		Sleyed or Lo		ia Colors	Organic Pans	•	
		Sulfidic Odor	` /		1g or Fe Cor				al Hydric Soils List	
		Aguic Moistur	e Regime		ligh Organic			Other (explai		
			D		ayer of San			· · · · · · · · · · · · · · · · · ·	· ·	
Remarks:				_	•	•				
								Soils Criteria M	Iet? ⊠Yes □No	
WETLAND DET	<b>TERMINATI</b>	ON								
'ydrophytic Veg			⊠No							
√etland Hydrol	ogy Present?	□Yes	⊠No							
Hydric Soil Pres		⊠Yes	□No							
Remarks: Wetlan										

Name: Andrew Allison Sheet 2 of 10

Yes



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

⊠Yes

□No

1997 Washington State Defineation Manual											
Project Site: Silv	er Lake Forest	Reserve		Dat	te: 2/23/0	06		Project #: 684.02			
		user Real Estate Devel	opment Company	County/State: Cowlitz County, Washington							
Test Plot Location	on: Wetland	D		Sec/Town/Range: Section 6, Township 9 North, Range 1 East, W.M.							
Do normal circui	mstances exis	t at the site?			Yes	⊠No	Plot II	Plot ID: TP 3 wetland			
Is the site signific	antly disturb	ed (atypical situation	1)?	⊠'	Yes	□N <sub>0</sub>	Comn	nunity ID:			
Is the site a poter	ıtial problem	area?			Yes	⊠No	Trans	ect ID:			
<u>VEGETATION</u> (Strata: tree, sapling, shrub, woody vine, herb)											
Dominant Plant											
	non Name		Scientific	Name			Strata		dicator Status		
<ol> <li>Soft rush*</li> </ol>		Juncus effi					Herb	80	FACW		
<ol><li>Evergreen blac</li></ol>		Rubus laci					Herb	30	FACU+		
3. Himalayan bla	ckberry	Rubus arm					Herb	10	FACU		
<ol><li>Douglas fir*</li></ol>		Pseudotsu	ga menziesii				Shrub	10	FACU		
5.											
6.											
7.											
8.											
		arygrass, slough sedge									
% of dominant s	pecies OBL, I	FACW, FACW-, FAC	C+, FAC 33%			6 required					
Remarks: *=dom	ninant species	based on the 50/20 rul	e: $1/3 = 33\%$ . Berrie	es and Fir g	rowing on	small hun					
							<b>v</b>	egetation Criteria Met	Yes INO		
TTT M TO CT O CT'											
HYDROLOGY		□ v ⊠ N		т	(-) -						
Recorded data as		☐ Yes ⊠ N ☐ Yes ⊠ N	-	1 y į	pe(s):		Watland II	lydrology Indicators			
Is it the growing Is site inundated:		Yes N		Dei	mary Ind	iaatawa	wettand H	Secondary Indicators	(2 magninad)		
is site inunuated:	í		U		Inundat			Oxidized Root Ch			
epth of surface	water.	NA		∀		ed < 12 in.		Local Soil Survey			
epth to free wat		NA NA		Ħ	Water M			Water Stained Le			
Depth to saturate	•	NA		ñ	Drift Li			FAC-Neutral Test			
Depth to saturate	.u 30113.	1111		Ħ		it Deposits	•	Other (Explain in	1		
				$\overline{\boxtimes}$		e Patterns		<u> </u>	, , , , , , , , , , , , , , , , , , , ,		
								Hydrology Criteri	a Met? □Yes ⊠No		
Remarks: Soils w	ere damp.							,			
SOILS:						Drainag	ge Class:	Excessively Drain	ed		
	Hazeldell gra	avelly silt loam, 20-30	% slopes (#77)					Somewhat Excess			
(Series and Phase)								Well Drained	·		
Taxonomy (Subg	roup): Xeric	Palehumults						Moderately Well	Drained		
, ,	.,							Somewhat Poorly	Drained		
Field observation	is confirm ma	pped soil type? 🔲 🗅	∕es ⊠No					Poorly Drained			
								☐ Very Poorly Drain	1ed		
Profile Description	o <b>n</b>										
Depth (inches)	<u>Horizon</u>	Matrix color	Mottle Color		Mottle A	Abundanc	<u>e</u>	Mottle Size	Texture		
					(few, com	ımon, mar	ıy)	(fine, med, coarse)			
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 Indic	ators	Histosol (-ists)		Red	ucing Cor	nditions		Organic Streakii	ng in Sandy Soils		
		Histic Epipedo	n (8-16")			w Chroma	a Colors	Organic Pans			
		Sulfidic Odor	,		or Fe Cor			Listed on Local	Hydric Soils List		
		Aquic Moistur	e Regime			Content	in	Other (explain in			
			. 0		er of San		•		······································		
Remarks: Mottli	ng.										
Soils Criteria Met? Xes No											
2000 2000 1000 1000											
WETLAND DET	ΓERMINATI	ON									
WETLAND DET			□No								
ydrophytic Veg	getation Domi		□No □No								
	getation Domi ogy Present?	inant? 🛛 🖾 Yes									

Name: Andrew Allison Sheet 3 of 10



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											
Project Site: Silv	Date: 2/23/06 Project #: 684.02										
		iser Real Estate Deve	lopment Company		County/State: Cowlitz County, Washington						
Test Plot Location			nopment Company		Sec/Town/Range: Section 6, Township 9 North, Range 1 East, W.M.						
1 est Flot Locatio	Jii. South of	Wettalid D			Sec. Towns	inge.	3cction (	, TOWIIS	ship 5 Hortii, Range	1 Cast, W.W.	
Do normal circui	mstances exis	t at the site?			□Yes	⊠N	lo	Plot II	D: TP 4 upland		
		ed (atypical situation	n)?		⊠Yes				unity ID:		
Is the site a poter					□Yes	ØN		Transe	ect ID:		
AS the site a post.	The second										
VEGETATION	(Strata: tree,	sapling, shrub, woo	dy vine, herb)								
Dominant Plant S			•								
Comn	non Name		Scientific Name						% Cover	Indicator Status	
<ol> <li>Douglas fir*</li> </ol>		Pseudotsi	uga menziesii				SI	ırub	20	<u>FACU</u>	
2. Sword fern*		Polystich	um munitum				H	erb	30	<u>FACU</u>	
<ol><li>Himalayan blad</li></ol>	ckberry*	Rubus ari	menicus				H	erb	80	FACU	
4. Soft rush*		Juncus ef	fusus				H	erb	40	FACW	
5.											
6.											
7.											
8.											
Other species present: slough sedge % of dominant species OBL, FACW, FACW-, FAC 25% (more than 50% required)  Remarks:*=dominant species based on the 50/20 rule: 1/4 = 25%  Vegetation Criteria Met?  Yes  No											
TITODOLOGY											
HYDROLOGY Recorded data av	vailable?	☐ Yes ⊠ !	No		Type(s):						
Is it the growing		= =	No.		Y pe(s).		We	tland H	ydrology Indicator	·s	
Is site inundated:			No		Primary Indi	icator			Secondary Indicat		
					Inundate		-			Channels < 12in. bgs	
epth of surface		<u>NA</u>			Saturate				Local Soil Sur		
epth to free wat	•	<u>NA</u>			Water M				Water Stained		
Depth to saturate	ed soils:	<u>NA</u>			Drift Lir				FAC-Neutral		
					Sedimen				Other (Explain	n in remarks)	
					☐ Drainage	e Patt	erns		TT41 C		
Remarks: Soils w	ere damn								Hydrology Cri	iteria Met? ∐Yes ⊠No	
Kemarks: Sons w	ere damp										
SOILS:						Dre	inage Cl		☐ Excessively Di	rained	
	Hazeldell gr	avelly silt loam, 20-3	0% slones (#77)			<u>D11</u>	inage Ci	133.		cessively Drained	
(Series and Phase)		ayony one rount, 20 3	070 0.00 0.777						Well Drained     ■ Well	December 2 mines	
Taxonomy (Subgi		Palehumults							Moderately W	ell Drained	
, (									Somewhat Poo	orly Drained	
Field observation	is confirm ma	pped soil type? 🔲	Yes ⊠No						Poorly Draine		
									☐ Very Poorly D	Prained	
Profile Description	on										
Depth (inches)	<u>Horizon</u>	Matrix color	Mottle Color		Mottle A				Mottle Size	Texture	
0.16		10 VD 4/2	10 VD 4/1	+	(few, com		many)		(fine, med, coars		
0-16	A	10 YR 4/2	10 YR 4/1	+		few			fine	sandy clay	
				+-							
			+	-							
Hydric Soil Indic	notors	Histosol (-ists	1	$\vdash_{\sqcap}$	Reducing Cor	aditio	n.c		Organia Stra	aking in Sandy Soils	
LAYGERC SOIL THOIC	-A3UI 3	Histosof (-1818		$\boxtimes$	Gleyed or Lov			) re	Organic Stre		
		Sulfidic Odor			Mg or Fe Con			3		s cal Hydric Soils List	
		Aquic Moistu		H	High Organic					in in remarks)	
		/iquic //ioistu	. o xegime	<u></u>	Layer of Sand				M Other (expra	i cinai 63)	
Remarks: Mottli	ng.				2, cr 0. 0am	_, 50					
	.ن.								Soils Criteria	Met? XYes No	
WETLAND DET	<b>TERMINATI</b>	ON									
ydrophytic Veg			$\boxtimes$ No								
Wetland Hydrol	ogy Present?	□Yes	⊠No								
Hydric Soil Pres		⊠Ves	□No.								

Name: Andrew Allison

Remarks: Wetland criteria are not met.

Is test plot within a wetland?

Sheet 4 of 10

 $\boxtimes N_0$ 

☐ Yes



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1997 Washington State Delineation Manual										
roject Site: Silver Lake Forest Reserve Date: 2/23/06 Project #: 684.0										
						ate: 2/23/06				
		user Real Estate Devel	opment Company		County/State: Cowlitz County, Washington Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.					
Test Plot Location	on: Wetland	A		- 1	Sec/Town/R	ange: 3	section 36, 10W	nsnip 10 North, Kang	ge I West, W.M.	
						- Davi	701 . 77	D FED 5 I		
Do normal circui					Yes	⊠No		D: TP 5 wetland		
		ed (atypical situation	1)?		∑Yes	□No		nunity ID:		
Is the site a poter	itial problem	area?			☐ Yes	⊠No	Trans	ect ID:		
VEGETATION  Dominant Plant S		sapling, shrub, wood								
Comn	non Name		Scientific:	Name			Strata	% Cover	Indicator Status	
1. Red-osier dogy	vood*	Cornus sei	ricea			1	Shrub	50	FACW	
2. Douglas fir		Pseudotsu	ga menziesii				Shrub	5	FACU	
3. Sword fern			m munitum				Herb	20	FACU	
4. Evergreen blac	kherry	Rubus laci					Herb	10	PACU+	
5. Soft rush*		Juncus eff					Herb	80	FACW	
6.		0 11.100.00 035.						-	171011	
7.										
8.								-		
	ent: Canada t	thistle, slough sedge								
		FACW, FACW-, FAC	C+, FAC 100%	(m	ore than 50%	/ requi	rad)			
		pased on the 50/20 rule		(me	ore man 50 /	o regun	(eu)			
Kemaiksuolili	nan species 0	ased on the 30/20 fulc	10070				v	egetation Criteria N	1et? ⊠Ves □No	
							<b>v</b>	Section Citteria II	Yes. KAY62 []140	
HYDROLOGY										
Recorded data as	ailahla?	☐ Yes ⊠ N			Type(s):					
Is it the growing		☐ Yes ☒ N			rype(s):		Wetland U	ydrology Indicators		
Is it the growing in the last site inundated?		☐ Yes ⊠ N		,	Primary Ind	icators	Wellanu 1	Secondary Indicators	-	
is site inunuateu:	•	Li res 🖂 IV	U	ĺ	☐ Inundated ☐ Oxidized Root Channels < 12in. bgs					
opth of surface	wotor	<u>NA</u>		i	Saturate		in	Local Soil Sur		
epth of surface		<u>NA</u>		i	Water N			☐ Water Stained		
		8"		ľ	Drift Li			FAC-Neutral		
Depth to saturate	d sons:	<u>o</u>		ľ	Sedimer		.: * ~			
				ř				Other (Explain	in remarks)	
				L	⊠ Drainag	e ratter	118	Hadaalaan Cair	NAME OF STATE OF STAT	
Damenhar Calle	:	in the gleyed horizon.	Clar, poile liteate, did		watar ta fla	i=ta =		Hydrology Cri	teria Met? 🛮 Yes 🔲 No 📗	
Remarks: Sons w	ere saturated i	in the gleyed nortzon.	Clay soils likely uid	not anov	w water to He	W IIIO S	on pit.			
COLLE						Dunia	nage Class:	C Parameter No.	-:	
SOILS:	77		0/ -1 (#77)			Drair	tage Class:	Excessively Dr		
		avelly silt loam, 20-30	% Slopes (#//)						essively Drained	
(Series and Phase)		D 1 1 1:						Well Drained		
Taxonomy (Subgi	roup): Xeric	Palenumuits						Moderately W		
<b>Y</b> 71 * 3 * 3 * 4	-		, K750					Somewhat Poo		
Field observation	is confirm ma	apped soil type?	res 🖾 No					Poorly Draine		
n e. n								☐ Very Poorly D	rained	
Profile Description		1	Mantha C. I		N# - 441	A L 3		Maril C'	<b>*</b> ·	
Depth (inches)	<u>Horizon</u>	Matrix color	Mottle Color	}	Mottle /			Mottle Size	Texture	
2.2		10 375 077			(few, con		іапу)	(fine, med, coarse		
0-8	A	10 YR 2/1	10 1/0 4/4						sandy clay	
8-16	A	Gley 1 4/N	10 YR 4/4		r	nany		coarse	clay	
Hydric Soil Indic	ators	Histosol (-ists)			teducing Co			Organic Stre	aking in Sandy Soils	
		Histic Epipedo	n (8-16")	$\boxtimes$ G	leyed or Lo	w Chro	ma Colors	Organic Pans	1	
		Sulfidic Odor	,		ig or Fe Co				al Hydric Soils List	
		Aquic Moistur	e Regime		ligh Organic				n in remarks)	
		— · · · · · · · · · · · · · · · · · · ·	. 0	_	ayer of San				• /	
Remarks: Mottli	ng.			_						
	<u>.</u>							Soils Criteria N	1et? ⊠Yes □No	
			<del></del>						<u></u>	
WETLAND DET	CERMINATI	ON								
ydrophytic Veg			$\square$ No							
Wetland Hydrol	=	⊠Yes	□No							
Hydric Soil Present?										
Remarks Wellar										

Name: Andrew Allison Sheet 5 of 10

⊠Yes

□No



Name: Andrew Allison

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Development Company  (ation)?  woody vine, herb)  Scientific N  dium aquilinum  ca arundinacea theria shallon	Sec/Town/F	te: Cowlitz	Plot ID:	Project #: 684. nington ship 10 North, Range 1 : TP 6 upland inity ID:					
woody vine, herb)  Scientific N  dium aquilinum ca arundinacea	County/Sta Sec/Town/F	te: Cowlitz tange: Sect	Plot ID:	nington ship 10 North, Range 1 TP 6 upland unity ID:					
woody vine, herb)  Scientific N  dium aquilinum ca arundinacea	Sec/Town/F	kange: Sect  ⊠No  □No	Plot ID:	ship 10 North, Range 1 TP 6 upland unity ID:	West, W.M.				
woody vine, herb)  Scientific N  dium aquilinum ca arundinacea	☐Yes ☐Yes ☐Yes	⊠No   □No	Plot ID:	: TP 6 upland	Treaty Trave.				
woody vine, herb)  Scientific N dium aquilinum ca arundinacea	⊠Yes □Yes	□No	Commu	nity ID:					
woody vine, herb)  Scientific N dium aquilinum ca arundinacea	⊠Yes □Yes	□No	Commu	nity ID:					
woody vine, herb)  Scientific N dium aquilinum ca arundinacea	Yes								
Scientific N dium aquilinum ca arundinacea		<u> </u>	Transec	a ib					
Scientific N dium aquilinum ca arundinacea	Name								
Scientific N dium aquilinum ca arundinacea	Name								
dium aquilinum ca arundinacea	Valife		Strata	% Cover Inc	dicator Status				
ca arundinacea			Herb	30	FACU				
			Herb	80	FAC-				
meria snation					FACU				
nia namiora					FACU				
	~				FACW				
44									
			15 THE STATE OF TH		FACU				
					FACU				
us sericea			Shrub	10	FACW				
Other species present: % of dominant species OBL, FACW, FACW-, FAC+, FAC 33% Remarks:*=dominant species based on the 50/20 rule = 1/3 = 33%  Vegetation Criteria Met? Yes No									
☑ No	Primary Inc Inunda Saturat Water I Drift L	dicators ted ed < 12 in. Marks ines nt Deposits	<u>s</u> [	econdary Indicators Oxidized Root Ch Local Soil Survey Water Stained Le FAC-Neutral Test Other (Explain in	annels < 12in. bgs Data aves				
		Drainage		Somewhat Excess	ively Drained Drained Drained				
mottle Color			,	Mottle Size	Texture				
10 VD 4/1			4		condu alau la am				
10 1K 4/1	CC	пиноп		meatum	sandy clay loam				
pedon (8-16") dor	☐ Gleyed or Lo ☐ Mg or Fe Co ☐ High Organi	ow Chroma ncretions c Content i		☐ Organic Streaking in Sandy Soils ☐ Organic Pans ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
				Soils Criteria Met	? ⊠Yes ∐No				
′es ⊠No									
	theria shallon  onia nervosa us effusus ss ursinus dotsuga menziesii us sericea  FAC+, FAC 33%  orule = 1/3 = 33%  No	theria shallon  onia nervosa us effusus s ursinus dotsuga menziesti us sericea  \$\text{FAC}_{\text{FAC}} \text{33\%} \text{ (more than 50\)} \text{ \$\text{O}_{\text{Tunda}} \text{ \$\text{Ves} \sum \text{No} \text{  Primary Inc Inunda Saturat Water I Sedime Draina;  20-30\% slopes (#77)  \text{Yes \sum \text{No}}  \text{  \text{Mottle Color} \text{ (few, cor} \text{  Inunda (few, cor}   Inunda (few,	theria shallon onia nervosa us effusus s ursinus dotsuga menziesii us sericea  Primary Indicators Inundated Saturated < 12 in. Water Marks Drift Lines Sediment Deposits Drainage Patterns  Primary Indicators Inundated Saturated < 12 in. Water Marks Drift Lines Sediment Deposits Drainage Patterns  Primary Indicators Inundated Saturated < 12 in. Water Marks Drift Lines Sediment Deposits Drainage Patterns  Primary Indicators Inundated Saturated < 12 in. Water Marks Drift Lines Sediment Deposits Drainage Patterns  Primary Indicators Inundated Saturated < 12 in. Water Marks Drift Lines Sediment Deposits Drainage Sediment Deposits Drainage Onainage  Primary Indicators Sediment Deposits Drainage Sediment Deposits Drainage Onainage  Primary Indicators Sediment Deposits Drainage Onainage  Primary Indicators Sediment Deposits Drainage Sediment Deposits Drainage Onainage  Primary Indicators Sediment Deposits Drainage	theria shallon	theria shallon				

Is test plot within a wetland?
Sheet 6 of 10

☐ Yes

 $\boxtimes$ No



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

Yes

⊠No

1997 Washington State Delineation Manual											
Project Site: Silver Lake Forest Reserve Date: 2/23/06							Project # . 694.02				
		user Real Estate Devel	onment Company								
					County/State: Cowlitz County, Washington  Sec/Town/Range: Section 36, Township 10 North, Range 1 West, W.M.						
lest Plot Locatio	on: Outside v	Wetland A west bound	агу		Sec/10wn/R	ange: 3	section 36, 10w	nship 10 North, Kanj	ge I west, w.ivi.		
Do normal circui	mstances exis	t at the site?			Yes	⊠No	Plot I	D: TP 7 upland			
		ped (atypical situation	1)?		⊠Yes	□ No		nunity ID:			
Is the site a poter			<u>.,.</u>		Yes	⊠No		sect ID:			
is the site a poter	itiai probicii	arca.	-			[ EZI.10	Trans	ccc ib.			
VEGETATION	(Strata: tree.	sapling, shrub, wood	ly vine, herb)								
Dominant Plant		, outpung, our 20,	-5,								
	non Name		Scientific	Name			Strata	% Cover	Indicator Status		
I. Beaked hazelni	ut*	Corylus co	rnuta				Shrub	20	FACU		
2. Douglas fir*		Pseudotsu	ga menziesii				Shrub	10	FACU		
3. Sword fern*		Polystichu	m munitum				Herb	20	FACU		
4. Soft rush		Juncus effi	usus				Herb	10	FACW		
5. Salal*		Gaultheria	shallon				Herb	30	FACU		
6. Oregon grape*		Mahonia n	iervosa				Herb	30	FACU		
7.											
8.											
	ent: bracken	fern, evergreen blackb	erry								
		FACW, FACW-, FAC	-	(r	nore than 50%	% reaui	red)				
		pased on the 50/20 rule		ζ-			,				
	•						V	egetation Criteria N	Aet? □Yes ⊠No		
HYDROLOGY											
Recorded data av	vailable?	☐ Yes ⊠ N	0		Type(s):						
Is it the growing	season?	☐ Yes ⊠ N	0		•		Wetland F	lydrology Indicators	<u>s</u>		
Is site inundated	?	☐ Yes ⊠ N	0		Primary Ind	icators		Secondary Indicate	ors (2 required)		
					Inundated Oxidized Root Channels < 12in. bgs						
epth of surface	water:	<u>NA</u>			Saturate	ed < 12	in,	■ Local Soil Sur	vey Data		
epth to free was		<u>NA</u>			Water N	_		Water Stained	1		
Depth to saturate	ed soils:	<u>NA</u>			🔲 Drift Li			FAC-Neutral 1			
					Sedimer			Other (Explain	n in remarks)		
					☐ Drainag	e Patter	ns				
								Hydrology Crit	teria Met? 🗌 Yes 🖾 No 📗		
Remarks:											
COTI C.						Donali	Classi	D. Emanadarda Da	a tu a d		
SOILS:	Manual allows at	l 1 0 40/ -1	(#124)			Draii	iage Class:	Excessively Dr	(		
		lay loam, 0-4% slopes	(#134)					☐ Somewhat Excessively Drained ☐ Well Drained			
(Series and Phase)		is Fuder and C							all Durings		
Taxonomy (Subg	roup): Omor	ic Endoaquaits						☐ Moderately W ☐ Somewhat Poo			
Field observation	o confirm me	apped soil type?	/as ⊠No					Poorly Draine	-		
Field observation	is commitme ma	tpped son type: 🔲	ies Mino					Very Poorly D			
Profile Description	O.TI							very roomy D	ı amtu		
Depth (inches)	Horizon	Matrix color	Mottle Color	1	Mottle	Abunda	nce	Mottle Size	Texture		
zepan (menes)	**********	1.2.11113 20101			(few, con			(fine, med, coarse			
0-16	A	10 YR 4/I		1	<u> </u>				sandy clay loam		
Hydric Soil Indic	ators	Histosol (-ists)			Reducing Co	nditions		Organic Stre	aking in Sandy Soils		
		Histic Epipedo	n (8-16")		Gleyed or Lo			Organic Pan			
		Sulfidic Odor	(0 10 )		Mg or Fe Co				cal Hydric Soils List		
		Aquic Moistur	e Regime	High Organic				n in remarks)			
		Aquic (Hoistai	c Negime	Ц	Layer of San			- Other (expian	ii ii i ciia ks)		
Remarks:					Layer Or Oall	G 50113					
z-citian ich								Soils Criteria N	Aet? ⊠Yes □No		
								2 - 110 3.7161.10 1			
WETLAND DET	TERMINATI	ON									
ydrophytic Veg			⊠No								
, √etland Hydrol	-	□Yes	⊠No								
Hydric Soil Pres		⊠Yes	□No								
Remarks: Wetlar			<del></del>								

Name: Andrew Allison Sheet 7 of 10



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□No

⊠Yes

. roject Site: Sil					Date: 2/23/			Project #: 684.	02
		user Real Estate Devel	opment Company				tz County, Wa		**/ ***
Test Plot Location	on: Wetland	A, west portion			Sec/Town/R	ange: Se	ection 36, Tow	nship 10 North, Range 1	West, W.M.
D		4 - 4 4 h 14 - 7			Yes	⊠No	Dies II	D: TP 8 wetland	
Do normal circus			.\0						
		ed (atypical situation	1)?		∑Yes	□N <sub>0</sub>		nunity ID:	
Is the site a poter	itial problem	area?			Yes	⊠N <sub>0</sub>	Irans	ect ID:	
VEGETATION Dominant Plant S		sapling, shrub, wood	ly vine, herb)						
	on Name		Scientific	Name	e		Strata	% Cover Inc	dicator Status
1. Red alder*		Alnus rubr	ra				Tree	20	FAC
2. Douglas fir*		Pseudotsu	ga menziesii				Tree	10	FACU
3. Indian plum*		Oemleria d	cerasiformis				Shrub	10	FACU
4 Evergreen blac	kberry	Rubus laci	niatus				Herb	20	FACU+
5. Soft rush*		Juncus effi	usus				Herb	70	FACW
6. Sword fern			m munitum				Herb	20	FACU+
7.									
8.									
% of dominant sp	pecies OBL, l	fern, Himalayan black FACW, FACW-, FAC ased on the 50/20 rule	C+, FAC 50%	cut re	more than 50° planted with fir	% require	nocks within w	vetland. Vegetation Criteria Met	? ⊠Yes □No
HYDROLOGY Recorded data av Is it the growing: Is site inundated?  opth of surface pth to free wat Depth to saturate	season? water: er in pit:	☐ Yes ☒ N ☐ Yes ☒ N ☐ Yes ☒ N ☐ Yes ☒ N ☐ NA NA 0"	0		☐ Water I ☐ Drift Li ☐ Sedime	ted ed < 12 ir Marks	ı. ts	Ivdrology Indicators Secondary Indicators Oxidized Root Ch Local Soil Survey Water Stained Le FAC-Neutral Test Other (Explain in	annels < 12in. bgs Data aves
	aturated at the	surface. Heavy clay s	oils prevented test pi	t from	n filling with w				
(Series and Phase) Taxonomy (Subgr	roup): <u>Umbr</u> s confirm ma	lay loam, 0-4% slopes ic Endoaqulafs apped soil type?				Drains	age Class:	<ul> <li>□ Excessively Drain</li> <li>□ Somewhat Excess</li> <li>□ Well Drained</li> <li>□ Moderately Well</li> <li>□ Somewhat Poorly</li> <li>□ Poorly Drained</li> <li>□ Very Poorly Drain</li> </ul>	ively Drained Drained Drained
Depth (inches)	Horizon	Matrix color	Mottle Color	Г	Mottle	Abundan	ce	Mottle Size	Texture
						nmon, ma		(fine, med, coarse)	
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 Indic		Histosol (-ists) Histic Epipedo Sulfidic Odor Aquic Moistur	,		Reducing Co Gleyed or Lo Mg or Fe Co High Organi Layer of San	ow Chron ncretions c Conten		☐ Organic Streakii ☐ Organic Pans ☑ Listed on Local ☐ ☑ Other (explain in	remarks)
wetland DET drophytic Veg vetland Hydrold Hydric Soil Prese Remarks: Wetlan	getation Dom ogy Present? ent?	inant? ⊠Yes ⊠Yes ⊠Yes	□No □No □No						

Name: Andrew Allison Sheet 8 of 10



Name: Andrew Allison

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

trainst Cita. C:	lyar I also Essa	oct Dacarus			n.	ate: 2/23	V06			Project # : 6	584.02
roject Site: Si				opment Company				vlitz County,	Washing		JO4.UL
Test Plot Location											nge I West, W.M.
Do normal circu	mstances exis	st at the sit	e?	_		Yes	⊠N	o Pi	ot ID: T	P 9 wetland	
Is the site signific	cantly disturb	bed (atypic	al situation	1)?		Yes			mmunit	y ID:	
Is the site a poter	ntial problem	area?				Yes	□⊠N	o Tr	ansect I	D:	
VEGETATION Dominant Plant		, sapling, s	hrub, wood	ly vine, herb)							
	non Name			Scientific	Name			Strata		% Cover	Indicator Status
1. Red alder*			Alnus rubr		,			Tree		30	FAC
2. Reed canarygr	ass*			rundinacea				Herb		70	FACW
3. Soft rush*			Juncus effi	usus				Herb		80	FACW
4. Evergreen blac	kberry		Rubus laci					Herb		5	FACU+
5. Lady fern			Athyrium f	îlix-femina				Herb		10	FAC
6.											
7.											
8.											
Other species pres % of dominant s Remarks:*=dom	pecies OBL, I	FACW, FA			(mor	e than 50	% regu	ired)	Vegeta	ation Criteria	Met? ⊠Yes □No
HYDROLOGY Recorded data as Is it the growing Is site inundated Pepth of surface 2pth to free wa Depth to saturate  Remarks:	season? ? water: ter in pit:	Ye   Ye   Ye   Ye   Ye   Ye   Ye   Ye	es 🔯 N	0	<u>Pr</u> □	Water Drift I Sedime	ited ted < 12 Marks	in.		Oxidized Roo Local Soil Sui Water Stained FAC-Neutral Other (Explai	ors (2 required) t Channels < 12in. bgs rvey Data d Leaves
SOILS: Map Unit Name: (Series and Phase) Taxonomy (Subg	) roup): <u>Xeric</u> ns confirm ma	Haplohum	<u>ults</u>				<u>Dra</u>	inage Class:		Excessively D Somewhat Ex Well Drained Moderately V Somewhat Po Poorly Draine Very Poorly I	cessively Drained Vell Drained orly Drained ed
Depth (inches)	Horizon	Matri	x color	Mottle Color		Mottle	Abund		(6	Mottle Size	Texture se)
0-3	A	10 Y	'R 4/1			, , , , ,			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		sandy clay
3-16	A		5/10Y	Gley 1 7/5GY		C	ommon			medium	clay
Hydric Soil India		☐ Hist	tosol (-ists) tic Epipedo fidic Odor tic Moistur	, ,	⊠ Gle □ Mg □ Hig	ducing C eyed or L g or Fe C gh Organ yer of Sa	ow Chroncretic ic Cont	oma Colors ns ent in		Organic Par Listed on Lo	eaking in Sandy Soils us
Remarks: Mottli	ng.									Soils Criteria	Met? ⊠Yes □No
WETLAND DE Tydrophytic Ve /etland Hydrol Hydric Soil Pres Remarks: Wetlan	getation Dom ogy Present? ent?	inant?	⊠Yes ⊠Yes ⊠Yes	□No □No □No				Is test plo	t within	a wetland?	⊠Yes □No

Sheet 9 of 10



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roject Site: Silv				Date: 2/2			Project #: 684.0	)2
		user Real Estate Dev				tz County, Wa		
Test Plot Locatio	n: West of t	he Hansen Road gate	e, east of Wetland B	Sec/Town	Range: Se	ction 36, Tow	vnship 10 North, Range 1	West, W.M.
					F7			
Do normal circun				Yes	No		D: TP 10 upland	
		ed (atypical situati	on)?	⊠Yes	□ No		nunity ID:	
Is the site a poten	tial problem	area?		□Yes	No	Trans	sect ID:	
VEGETATION ( Dominant Plant S		sapling, shrub, wo	ody vine, herb)					
	on Name		Scientific	Name		Strata	% Cover Inc	dicator Status
I. Evergreen black	cberry	Rubus la				Herb	10	FACU+
2. Sword fern		Polystich	ium munitum			Herb	15	FACU
3. Himalayan blac	kberry*	Rubus ar	menicus			Herb	40	FACU
4. Red alder*		Alnus ru	bra			Herb	30	FAC
5. Douglas fir*		Pseudots	uga menziesii			Tree	40	FACU
6.								
7.								
8.								
	ecies OBL, F	FACW, FACW-, FA based on the 50/20 r		(more than 5	)% require	•	Jegetation Criteria Met	? □Yes ⊠No
THE POLOCIE								
HYDROLOGY Recorded data av Is it the growing s Is site inundated?  •pth of surface v  :pth to free wate Depth to saturated  Remarks:  SOILS: Map Unit Name:	water: er in pit: d soils:	☐ Yes 🖾	No No No	☐ Water ☐ Drift ☐ Sedim	ated Ated < 12 in Marks Lines ent Deposit age Pattern	s	Hydrology Indicators Secondary Indicators Oxidized Root Ch Local Soil Survey Water Stained Le FAC-Neutral Test Other (Explain in Hydrology Criteri Excessively Drain Somewhat Excess	annels < 12in. bgs Data aves remarks) a Met? □Yes ⊠No
(Series and Phase)							Well Drained	
Taxonomy (Subgr	oup): Xeric	<u>Haplohumults</u>					Moderately Well	4
TT 1 1 41.	٠		lw Mw.				Somewhat Poorly	Drained
rieid observations	s consirm ma	pped soil type?	I Les MINO				Poorly Drained	nod.
Drofila Dosavistic	n						☐ Very Poorly Drain	icu
Profile Description Depth (inches)	n Horizon	Matrix color	Mottle Color	Massi	e Abundan		Mottle Size	Texture
Depth (menes)	TYOTIEUII	MARINIA COIOI	Mottic Color		ommon, ma		(fine, med, coarse)	<u> </u>
0-10	A	10 YR 3/4		1 (121.76		× /		sandy loam
10-16	A	Gley 1 3/N						clay
10								
Hydric Soil Indica	ators	Histosol (-ist: Histic Epiped Sulfidic Odol Aquic Moistu	lon (8-16")	Reducing ( Reducing ( Gleyed or I Mg or Fe ( High Orga Layer of S	Low Chrom oncretions nic Content		Organic Streaki Organic Pans Listed on Local Other (explain in	
Remarks:				-			Soils Criteria Met	? ⊠Yes □No
WETLAND DET vdrophytic Veg .vetland Hydrolo Hydric Soil Prese Remarks: Wetlan	etation Domi gy Present? ent?	inant? □Yes □Yes ⊠Yes	⊠No ⊠No □No			ls test plot w	ithin a wetland?	∐Yes ⊠No

Is test plot within a wetland? Sheet 10 of 10 Name: Andrew Allison

### DRAFT WETLAND RATING FORM - WESTERN WASHINGTON

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

Location: SEC: 36, 31 TWNSHP: 10N, 9N RNGE: 1W, (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 S	SUMMARY OF RATING	
Category based on FUNCTIO	ONS provided by wetland	
1 11 <u>X</u> 111	ıv	
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 Category IV = Score < 30	Score for Habitat Functions	31
	TOTAL Score for functions	51
1 <u>X</u> II I	CHARACTERISTICS of wetle  Does not Apply  e "highest" category from above)	and 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. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	(coho and steelhead)	
SP2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.	(coho and steelhead)	
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		Unknown
SP4. 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.		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

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
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
Your wetland seems to be difficult to classify. For example, seeps at the base of a slope may grade into

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 dirch 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	D1.4 Characteristics of seasonal ponding or inundation.	
	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.	
	Area seasonally ponded is $\frac{1}{2}$ total area of wetland points = 4	1
	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 opportunity 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.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft of wetland	
	A stream or culvert discharges into wetland that drains developed areas,	
/	residential areas, farmed fields, roads, or clear-cut logging	
	Residential, urban areas, golf courses are within 150 ft of wetland	multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	
	Other	
	YES multiplier is 2 NO multiplier is 1	
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 3. Does the wetland have the potential to reduce flooding and erosion?	100 Te 100 Te
	(see p. 46)	1
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 dirch points = 1	
	Wetland has an unconstricted surface outlet points = 0	
D	D 3.2 Depth of storage during wet periods	
	Estimate the height of ponding above the bottom of the outlet	
	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	
	Estimate the ratio of the area of upstream basin contributing surface water to the	
	wetland to the area of the wetland itself.	
	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	5
	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	Total for D 3  Add the points in the boxes above	
_	That the power and the coasts doore	
D	D 4. Does the wetland have the opportunity 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.	
	Note which of the following indicators of opportunity apply.	
	Wetland is in a headwater of a river or stream that has flooding problems	
	wetland drains to a river or stream that has flooding problems	
	Wetland has no outlet and impounds surface runoff water that might	multiplier
	otherwise flow into a river or stream that has flooding problems	
	│	
,	YES multiplier is 2 NO multiplier is 1	l —
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	
7	Add score to table on p. 1	

( Terr	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve	
2	R I. Does the wetland have the potential to improve water quality? (see p. 50)	/
×	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  Depressions cover > 1/2 area of wetland  points = 4	
	of wetland	
~	getation in the wetland: area of the wetland	
	wetland wetland 1/3 area of wetland	
×	Add the points in the boxes above	
$\simeq$	R 2. Does the wetland have the <u>opportunity</u> of 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 fources of pollutants.  Grazing in the wetland of within 150ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 feet of wetland A stream or culver discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential, when areas, golf courses are within 150 ft of wetland The river of 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 Other	multiplier
	lie.	
K	TOTAL - Water Quality Functions Multiply the score from R1 by R2  Add score to table on p. 1	

	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding	1
		A Driver See
	and stream erosion	/
R	R 3. Does the wetland have the potential to reduce flooding and erosion?	\
5	32 Champtonication of the assemblant atomora the weetland amountedown	
<b>¥</b>	A 3.1 Chalacteristics of the overballs storage the wetland provides.  Estimate the overage 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).	
	1	
	If the ratio is between $10-20$ points = 6	
	If the ratio is $5 - < 10$	
	If the ratio is $1-45$	
	If the ration is $<1$ points = 1	
~	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	
	23	
	Vegetation does not meet above criteria $= 0$	
×	Add the points in the boxes above	
a	R 4. Does the wetland have the grantunity to reduce flooding and erosion?	
4	Con 57	
	(see p. 57) Answer VES if the wetland is in a location in the watershed where the flood	
	change or reduction in winter value is a second of below below and of desirable	
	property and countries recognition from Stocking or expensive and for expensive Stocking Stoc	
	property and addate resources from mooding or excessive and or erosive mows.	
	Note which of the following conditions apply.	
	I here are human structures and activities downstream (roads, buildings,	
	bridge, farms) that can be damaged by flooding.	
	There are natural resources downstream (e.g. salmon redds) that can be	
	damaged by flooding	multiplier
	Country Countr	idninii
	(Angwer NO if the major source of water to the wetland is controlled by a reservoir	
	or the welland is tradi fringe along the states of a dike.	
1		
4		

2004 Form August 2004 Wetland Rating Form -

B	Lake-Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve	
	water quality	1
L	L 1. Does the wetland have the potential to improve water quality? (see p. 59)	13
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	6
	Vegetation is less than 6 ft wide points = 0	
T.	L 1.2 Characteristics of the vegetation in the wetland: 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.	
	Herbaceous plants cover >90% of the vegetated area points = 6	4
	Herbaceous plants cover $>2/3$ of the vegetated area points = 4	1
	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	
1	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	10
L	L 2. Does the wetland have the opportunity 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. Note which of the following conditions provide the sources of pollutants.  Wetland is along the shores of a lake or reservoir that does not meet water quality standards  Grazing in the wetland or within 150ft  Polluted water discharges to wetland along upland edge  Tilled fields or orchards within 150 feet of wetland  Residential or urban areas are within 150 ft of wetland  Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of lake shore)  Power boats with gasoline or diesel engines use the lake  Other	multiplier
_	YES multiplier is 2 NO multiplier is 1	2
L	TOTAL - Water Quality Functions Multiply the score from L1 by L2  Add score to table on p. 1	20

Comments

L Lake-Fringe Wetlands Points HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion L 3. Does the wetland have the potential to reduce shoreline erosion? (see p. 62) 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): >3/4 of fringe vegetation is shrubs or trees at least 33 ft (10m wide) points = 6>3/4 of fringe vegetation is shrubs or trees at least 6 ft. (2m) wide) points = 46 >1/4 of fringe vegetation is shrubs or trees at least 33 ft (10m) wide points = 4Fringe vegetation is at least 6 ft (2m) wide points = 2Fringe vegetation is less than 6 ft (2m) wide points = 0L Record the points from the box above 6 L 4. Does the wetland have the opportunity 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. There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion. 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 multiplier Other \_\_\_\_ 2 **YES** multiplier is 2 □**NO** multiplier is 1 TOTAL - Hydrologic Functions Multiply the score from L 3 by L 4 Add score to table on p. 1 12

Comments

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
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)	
	Slope is greater than 5% points = 0	
_	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, herbaceaous vegetation > 90% of area points = 6  Dense, ungrazed, herbaceaous vegetation > 1/2 of area points = 3  Dense, woody vegetation > 1/2 of area points = 2  Dense, ungrazed, herbaceaous 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 opportunity 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.  Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Residential, urban areas, or golf courses are within 150 ft upslope of wetland Other	multiplier
	YES multiplier is 2 NO multiplier is 1	
S	TOTAL - Water Quality Functions Multiply the score from S1 by S2	

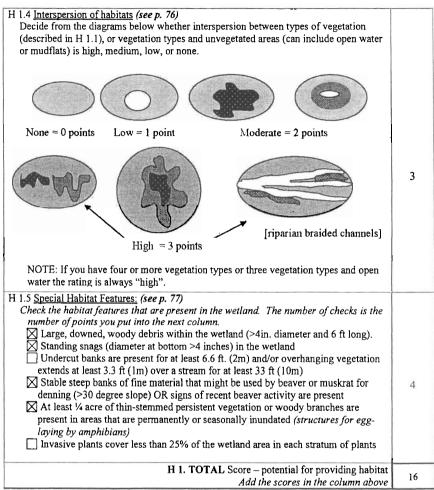
Comments

S	Slope Wetlands	Points	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce		
000000000000000000000000000000000000000	flooding and stream erosion		
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		
C	S 3.2 Characteristics of slope wetland that holds back small amounts of flood		
S	3.2 Characteristics of stope wethand that holds back strain attounts 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 opportunity 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.		
	Wetland has surface runoff that drains to a river or stream that has flooding		
	problems		
	Other	multiplier	
	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.)		
/	YES multiplier is 2 NO multiplier is 1		
5	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4		
	Add score to table on p. 1		

Comments

These questions apply to wetlands of a	ll HGM classes	10000000000000000000000000000000000000	Points
AABITAT FUNCTIONS - Indicators that we	tland functions to pro	vide important habitat	
1. Does the wetland have the potential to	provide habitat for	many species?	7
1 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present covers more than 10% of the area of the waxion Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have Forested (areas where trees have >30% Forested areas have 3 out of 5 strata (comoss/ground-cover)  Add the number of vegetation types that questions for the structure of the strategy of	etland or % acre.  >30% cover) b cover) anopy, sub-canopy, sh		4
	3 types	points = 2	
	2 types 1 type	points = 1 points = 0	1
H 1.2 Hydroperiods (see p. 73) Check the types of water regimes (hydroperegime has to cover more than 10% of the description of hydroperiods.) Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in	wetland or % acre to a  4 or more types p  3 types p  2 types p  n, or adjacent to, the v	count. (See text for  points = 3 present points = 2 present points = 1  present points = 1	3
Seasonally flowing stream or river in,  Lake-fringe wetland = 2 points  Freshwater tidal wetland = 2 points  H 1.3 Richness of Plant Species (see p. 75)	,	tland	
Count the number of plant species in the w patches of the same species can be combined You do not have to name the species.  Do not include Eurasian Milfoil, reed can Thistle.  If you counted:	etland that cover at le ed to meet the size thr	eshold.)	2
	- 12 species		
n you counted.	5 - 19 species	points = 1	

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Comments:

H 2. Does the wetland have the opportunity to provide habitat for many species?)	
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."	
100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>95% of circumference. No developed areas within undisturbed part of buffer.	
(relatively undisturbed also means no grazing)  Points = 5	
100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>50% circumference. Points = 4	
50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>95% circumference. Points = 4	
100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>25% circumference. Points = 3	
50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water	4
for $> 50\%$ circumference. Points = 3	
If buffer does not meet any of the three criteria above	
No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland	
> 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2	
No paved areas or buildings within 50m of wetland for >50% circumference.	
Light to moderate grazing or lawns are OK  Points = 2	
Heavy grazing in buffer.  Points = 1	
Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference	
(e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)  Points = 0	
Buffer does not meet any of the criteria above.  Points = 1	
Daniel does not meet any of the effecta above.	
H 2.2 Corridors and Connections (see p. 81)	
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).	
$\boxtimes$ YES = 4 points (go to H 2.3) $\square$ NO = go to H 2.2.2	
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	4
25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor	
as in the question above?	
$\square YES = 2 \text{ points } (go \text{ to } H \text{ 2.3}) \qquad \square NO = H \text{ 2.2.3}$	
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 (>40 acres) OR	
within 1 mi of a lake greater than 20 acres?	
YES = 1 point NO = 0 points	

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	3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
W	hich of the following priority habitats are within 330ft (100m) of the wetland?	
_(se	ee text for a more detailed description of these priority habitats)	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements	
	of both aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (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) > 81 cm (32 in) dbh or > 200 years of age.	
$ \boxtimes$	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
	cover may be less that 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.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants)	
	where grasses and/or forbs form the natural climax plant community.	
	Talus: 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.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
	canopy coverage of the oak component of the stand is 25%.	
	Urban Natural Open Space: 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.	
	Estuary/Estuary-like: 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.	
	Marine/Estuarine Shorelines: 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 = 4 points	
	• •	
	If wetland has 1 priority habitat = 1 point  No habitats = 0 points	

H 2.4 Wetland Landscape (choose the one description of the landscape around the	
wetland that best fits) (see p. 84)	
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	
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-	
fringe wetlands within $\frac{1}{2}$ mile points = 5	5
☐ There are at least 3 other wetlands within ½ mile, BUT the connections between them	
are disturbed points = 3	
☐ The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe	
wetlands within ½ mile points = 3	
There is at least 1 wetland within $\frac{1}{2}$ mile.	
☐ There are no wetlands within ½ mile. points = 0	
H 2. TOTAL Score -opportunity for providing habitat	1.5
Add the scores in the column above	15
Total Score for Habitat Functions - add the points for H 1, H 2 and record the result on p. 1	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
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.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt.	
YES = Go to SC 1.1 NO	
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?	
☐YES = Category I ☐NO go to SC 1.2	
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	
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 Spartina 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 Spartina 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 Spartina in determining	
the size threshold of 1 acre.	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of	
shrub, forest, or un-grazed or un-mowed grassland.	
The wetland has at least 2 of the following features: tidal channels,	
depressions with open water, or contiguous freshwater wetlands.	
-	

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Wetland Rating Form - western Washington

Natura Progra state T SC 2 S/T/R	Natural Heritage Wetlands (see p. 87)  I Heritage wetlands have been identified by the Washington Natural Heritage m/DNR as either high quality undisturbed wetlands or wetlands that support hreatened, Endangered, or Sensitive plant species.  I Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR) information from Appendix D or accessed from WNHP/DNR web site   (ES  — contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	YES = Category I	
0010		
	Bogs (see p. 87)	
	ne wetland (or part of the wetland) meet both the criteria for soils and	
	tion in bogs? Use the key below to identify if the wetland is a bog. If you	
	r yes you will still need to rate the wetland based on its functions.	
I.	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 $\square$ - go to Q. 3 No $\boxtimes$ go to Q. 2	
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 ☐ - go to Q. 3 No ☒ - Is not a bog for purpose of rating	
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 Is a bog for purpose of rating Nogo 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.	
4.	Is the wetland forested (> 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 (> 30% coverage of the total shrub/herbaceous cover)?	
	YES = Category I NO Is not a bog for purpose of rating	

SC 4.0 Forested Wetlands (see p. 90)	
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? If you answer yes you will still need to rate the wetland based on its functions.  Old-growth forests: (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.	
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.	CatI
<ul> <li>Mature forests: (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 that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.</li> <li></li></ul>	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?  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  The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)  YES = Go to SC 5.1 NO \( \sum \) not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions?  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).  At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  The wetland is larger than 1/10 acre (4350 square feet)  YES = Category I  NO = Category II	

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.	ļ
In practical terms that means the following geographic areas:	
Long Beach Peninsula – lands west of SR103	
Grayland-Westport- lands west of SR 105	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
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	Cat. I
on p. 1,	
If you answered NO for all types enter "Not Applicable" on p. 1.	

## DRAFT WETLAND RATING FORM - WESTERN WASHINGTON

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

Location: SEC: <u>31</u> TWNSHP: <u>10N</u> RNGE: <u>1E, W.M.</u> (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

ategory based on FUNCTION I II III X		
Category I = Score >70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Score for Water Quality Functions Score for Hydrologic Functions Score for Habitat Functions TOTAL Score for functions  CHARACTERISTICS of wetlet	8 16 24 48
I II I		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. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Unknown
SP2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		Unknown
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		Unknown
SP4. 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.		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
. Are the water levels in the wetland usually contro	lled by tides (i.e. except during floods)?
NO – go to 2 ☐YES – the wetland class	is Tidal Fringe
	riods of annual low flow below 0.5 ppt (parts per Fringe ⊠NO – Saltwater Tidal Fringe (Estuarine)
wetlands. If it is Saltwater Tidal Fringe it is called estuarine in the first and second edit Fringe in the Hydrogeomorphic Classificat in the earlier editions, and this separation is between editions, the term "Estuarine" wet	hwater Tidal Fringe use the forms for Riverine is rated as an Estuarine wetland. Wetlands that were ions of the rating system are called Salt Water Tidal ion. Estuarine wetlands were categorized separately is being kept in this revision. To maintain consistency land is kept. Please note, however, that the estuarine wetlands have changed (see pp. 6 and 9).
2. Is the topography within the wetland flat and prec NO – go to 3 YES – The wetland cl	•
If your wetland can be classified as a "Flats" wet	land, use the form for Depressional wetlands.
	on the shores of a body of open water (without any east 20 acres (8 ha) are permanently inundated
NO - go to 4 ☐YES - The wetland class	s is Lake-fringe (Lacustrine Fringe)
from seeps. It may flow subsurface, a  The water leaves the wetland without NOTE: Surface water does not pond	be very gradual), in one direction (unidirectional) and usually comes as sheetflow, or in a swale without distinct banks. at being impounded? d in these type of wetlands except occasionally in or behind hummocks( depressions are usually <3ft
stream or river? The flooding should occur at lea	re it gets inundated by overbank flooding from that ast once every two years, on the average, to answer are filled with water when the river is not flooding. is Riverine

3

- 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 □VES − 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	Treat as ESTUARINE under
wetland	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.

	ressional and Flats Wetlands		Points
1	WATER QUALITY FUNCTIONS - Indicators that wetland functions	to improve	
21	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:		
D	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	1
	Wetland is flat and has no obvious outlet and/or outlet is a ditch	points = 1	
	D 1.2 The soil 2 inches below the surface is clay, organic, or smells an	oxic	
	(hydrogen sulfide or rotten eggs).		
	YES	points = 4	0
	NO	points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or		
	Wetland has persistent, ungrazed, vegetation > = 95% of area	points = 5	
	Wetland has persistent, ungrazed, vegetation $> = 1/2$ of area	points = 3	5
	Wetland has persistent, ungrazed vegetation > = 1/10 of area	points = 1	
-	Wetland has persistent, ungrazed vegetation <1/10 of area D1.4 Characteristics of seasonal ponding or inundation.	points = 0	
D	This is the area of the wetland that is ponded for at least 2 months,	had duing out	
	sometime during the year. Do not count the area that is permanently		
	Estimate area as the average condition 5 out of 10 yrs.	у рониеи.	
	Area seasonally ponded is > ½ total area of wetland	points = 4	2
	Area seasonally ponded is > 1/2 total area of wetland	points = 2	2
	Area seasonally ponded is < ¼ 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		8
	D 2. Does the wetland have the opportunity to improve water qual	itu? (caa p. 44)	
D	Answer YES if you know or believe there are pollutants in groundw		
,	water coming into the wetland that would otherwise reduce water qu		
	streams, lakes or groundwater downgradient from the wetland? Not		
	following conditions provide the sources of pollutants.	o milion by the	
	Grazing in the wetland or within 150 ft		
	Untreated stormwater discharges to wetland		
	Tilled fields or orchards within 150 ft of wetland		
	A stream or culvert discharges into wetland that drains develop	ed areas,	
	residential areas, farmed fields, roads, or clear-cut logging	•	
	Residential, urban areas, golf courses are within 150 ft of wetle	and	multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen		manapher
	Other		1
	YES multiplier is 2 NO multiplier is 1		7
D	TOTAL - Water Quality Functions Multiply the score from D1 by		
	Add score to	table on p. 1	

D.	Depressional and Flats Wetlands		Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to red	luce	
	flooding and stream degradation		
	D 3. Does the wetland have the potential to reduce flooding and erosi	on?	
	(see p. 46)		
)	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	0
	Wetland is flat and has no obvious outlet and/or outlet is a small ditch		0
	Wetland has an unconstricted surface outlet	points = 0	
)	D 3.2 Depth of storage during wet periods		
	Estimate the height of ponding above the bottom of the outlet		
	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 $\leq$ 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		
	Marks of ponding less than 0.5 ft	points = 0	
)	D 3.3 Contribution of wetland to storage in the watershed	_	
	Estimate the ratio of the area of upstream basin contributing surface wat	er to the	
	wetland to the area of the wetland itself.		
	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	
)	Total for D 3  Add the points in the box	xes above	8
)	D 4. Does the wetland have the opportunity to reduce flooding and en	osion?	
	(see p. 49)		
	Answer YES if the wetland is in a location in the watershed where the		
	storage, or reduction in water velocity it provides, helps protect downs		
	property and aquatic resources from flooding or excessive and/or erosi		
	Answer NO if the water coming into the wetland is controlled by a str		
	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.		
	Note which of the following indicators of opportunity apply.		
	Wetland is in a headwater of a river or stream that has flooding p	robiems	
	Wetland drains to a river or stream that has flooding problems	-1-4	
	Wetland has no outlet and impounds surface runoff water that mi	gnt	
	otherwise flow into a river or stream that has flooding problems  Other	1	
	YES multiplier is 2 NO multiplier is 1		2
)	TOTAL - Hydrologic Functions Multiply the score from	D 3 by D 4	
,	Add score to		16
	. 144 30070 10	p. A	16

Wetland Rating Form – western Washington 5 August 2004 Wetland Rating Form – western Washington 6 August 2004

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	
	restriction and the second sec	
	Ungrazed, emergent plants > 2/3 area of wetland points = 6 Ungrazed, emergent plants > 1/3/ area of wetland points = 3	
	Ungrazed, emergent plants > 1/3/ area of wetland points = 3 Forest, shrub, and ungrazed emergent < 1/3 area of wetland points = 0	
_	rolest, sinuo, and ungrazed entergent < 1/3 area of wettand 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.  Grazing in the wetland or within 150ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 feet of wetland	
	A stream or culvert discharges into wetland that drains developed areas,	
	residential areas, farmed fields, roads, or clear-cut logging	
	Residential, urban areas, golf courses are within 150 ft of wetland The river or stream linked to the wetland has a contributing basin where	multiplier
	human activities have raised levels of sediment, toxic compounds or	mumpner
	nutrients in the river water above standards for water quality  Other	
	YES multiplier is 2 NO multiplier is 1	
R	TOTAL - Water Quality Functions Multiply the score from R1 by R2  Add score to table on p. 1	

Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
10/15	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?	
14	(see p. 54)	
R	R 3.1 Characteristics of the overbank storage the wetland provides:	
1	Estimate the average width of the wetland perpendicular to the direction of the	
- 1	flow and the width of the stream or river channel (distance between banks).	
1	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	
$\mathbf{R}$	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.	
1	Forest or shrub for $>1/3$ area OR Emergent plants $>2/3$ area <b>points = 7</b>	
- 1	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?	
1	(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.	
	There are human structures and activities downstream (roads, buildings,	
	bridges, farms) that can be damaged by flooding.	
	There are natural resources downstream (e.g. salmon redds) that can be	
	damaged by flooding	
	Other	multiplie
	(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.)	
	YES multiplier is 2 NO multiplier is 1	
R	TOTAL - Hydrologic Functions Multiply the score from R3 by R4	
1	Add score to table on p. 1	

Comments

L	Lake-Fringe Wetlands		Points
Jene	WATER QUALITY FUNCTIONS - Indicators that wetland function	ns to improve	
2.10	water quality	t-0 ( 50)	
L	L 1. Does the wetland have the <u>potential</u> to improve water quali	ty? (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 1.2 Characteristics of the vegetation in the wetland: choose the app	propriate	
	description that results in the highest points, and do not include a		
	your estimate of coverage. In this case the herbaceous playts can		
	dominant form (called emergent class) or as an understory in a s community.	rii uo or joresi	
	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 $\frac{1}{2}$ /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	
		in the boxes above	
L	L 2. Does the wetland have the opportunity to improve water qu		
	Answer YES if you know or believe there are pollutants in the		
	surface water flowing through the wetland to the lake is pollut	ed. Note which of	
	the following conditions provide the sources of pollutants.		
	Wetland is along the shores of a lake or reservoir that does	not meet water	
	quality standards Grazing in the wetland or within 150ft		
	Polluted water discharges to wetland along upland edge		
	Tilled fields or orchards within 150 feet of wetland		
	Residential or urban areas are within 150 ft of wetland		
	Parks with grassy areas that are maintained, ballfields, golf	courses (all	
	within 150 ft. of lake shore)		multiplier
	Power boats with gasoline or diesel engines use the lake		•
	Other		
	YES multiplier is 2 NO multiplier is 1		
$\mathbf{I}$		ore from L1 by L2	
7	Add score	to table on p. 1	
		-	

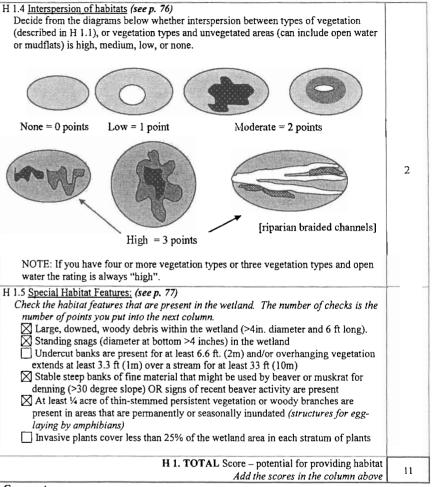
Comments

L	Lake-Fringe Wetlands		Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to redu and stream erosion	uce flooding	
L	L 3. Does the wetland have the potential to reduce shoreline erosion?	(see p. 62)	
L	L 3 Average width and characteristics of vegetation along the lakeshore include aquatic bed): (choose the highest scoring description that mate conditions in the wetland):		
		points = 6	
		points = 4	
		points = 4	
		points = 2	
	Fringe vegetation is less than 6 ft (2m) wide	points = 0	
L	Record the points from to	he box above	
L	L 4. Does the wetland have the opportunity to reduce erosion? (see p. Are there features along the shore which will be impacted if the shore! Note which of the following conditions apply.  There are human structures and activities along the upland edge of wetland (buildings, fields) that can be damaged by erosion.  There are andisturbed natural resources along the upland edge of (e.g. mature forests other than wetland) that can be damaged by she erosion.  Other	of the	
	☐YES multiplier is 2 ☐NO multiplier is 1		
L	TOTAL - Hydrologic Functions Multiply the score from		
K	Add score to	table on p. 1	
	Comments		

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
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, herbaceaous vegetation > 90% of area points = 6  Dense, ungrazed, herbaceaous vegetation > 1/2 of area points = 3  Dense, woody vegetation > 1/2 of area points = 2  Dense, ungrazed, herbaceaous 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.  Grazing in the wetland or within 150 ft  Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 feet of wetland Residential, urban areas, or golf courses are within 150 ft upslope of wetland Other YES multiplier is 2 NO multiplier is 1	multiplier
/	TOTAL - Water Quality Functions Multiply the score from S1 by S2	
	Add score to table on p. 1	
	Comments	

0.3	Slope wettanus	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce	/
	flooding and stream erosion	
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)  Dense, uncut, rigid vegetation >1/2 area of wetland  Dense, uncut, rigid vegetation >1/4 area of wetland  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 opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems	
	Other	multiplier
	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.)	Manipher
	YES multiplier is 2 NO multiplier is 1	
S	TOTAL - Hydrologic Functions 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 wet	land functions to prov	vide important habitat	
H 1. Does the wetland have the potential to p	orovide habitat for r	nany species?	
H 1.1 Vegetation structure (see p. 72)			
Check the types of vegetation classes present covers more than 10% of the area of the we		rdin) if the class	
Aquatic bed	etiana or % acre.		
Emergent plants			
Scrub/shrub (areas where shrubs have >	30% cover)		
Forested (areas where trees have >30%			
Forested areas have 3 out of 5 strata (ca	nopy, sub-canopy, sh	rubs, herbaceous,	2
moss/ground-cover)			
Add the number of vegetation types that qua			
	4 types or more	points = 4	
	3 types	points = 2	
	2 types	points = 1	
	1 type	points = 0	
H 1.2 Hydroperiods (see p. 73)	:	1	
Check the types of water regimes (hydroper, regime has to cover more than 10% of the w			
description of hydroperiods.)	retiuna or 74 acre to c	ouni. (See lext for	
Permanently flooded or inundated	4 or more types p	resent points = 3	
Seasonally flooded or inundated	3 types p		
Occasionally flooded or inundated	2 types p		2
Saturated only	71 1	•	-
Permanently flowing stream or river in	, or adjacent to, the w	etland	
Seasonally flowing stream or river in, or	or adjacent to, the we	tland	
Lake-fringe wetland = 2 points			
Freshwater tidal wetland = 2 points			
H 1.3 Richness of Plant Species (see p. 75)			
Count the number of plant species in the we			
patches of the same species can be combined	d to meet the size thre	eshold.)	
You do not have to name the species.		16 0 11	
Do not include Eurasian Milfoil, reed cand Thistle.	arygrass, purple loose	estrife, Canadian	
If you counted:	> 19 species	points = 2	
	5 - 19 species	points = 1	
List species below if you want to:	<5 species	points $= 0$	



Comments:

August 2004

, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	CONTRACTOR NO
1.2.1 Butters (see p. 80) Noose the description that best represents condition of buffer of wetland. The highest scoring	
undisturbed "  undisturbed "  undisturbed "  100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer.  (relatively undisturbed also means no grazing)  No m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.  Some (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference.  In the moderate of the solution of the solution of the solution of the solution of 170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference.  In the solution of solution of the solution of the solution of 170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference.  In the solution of solution of the solution of the solution of the solution of 170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >50% circumference.  No paved areas or buildings within 50m of wetland for >50% circumference.  Light to moderate grazing or lawns are OK.  Points = 1  Heavy grazing in buffer.  Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)  Buffer does not meet any of the criteria above.  Buffer does not meet any of the criteria above.	4
2.2 Corridors and Connections (see p. 81)  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 theaks in the corridor).  ■ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	4

12.	4 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
W	Which of the following priority nabitats are within 330tt (100m) of the wetland?	
2	Riparian: The area adjacent to aquatic systems with flowing water that contains elements	
1	of both aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (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	
Г	20 trees/ha (8 trees/acre) $> 81$ cm (32 in) dbh or $> 200$ years of age.	
	Mature forests: Stands with average diameters exceeding 55 cm (21 m) dbh; crown cover may be less that 100%, decay decadence mumbers of months and guaratity of large	
	downed material is generally less than that found in old-growth: 80 - 200 years old west	
	of the Cascade crest.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants)	
1	where grasses and/or forbs form the natural climax plant community.	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5	
	tt), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and	
Г	Caves: A naturally occurring partity made and a material of	
7	Oregon white Oak. Woodlands Stands of mins on a system of micronnected passages	
7	cannot coverage of the oak commonent of the chand is 25%.	
	Urban Natural Onen Snace: A priority species resides within or is adjacent to the onen	
]	space and uses it for breeding and/or repular feeding: and/or the open space functions as	
	a corridor connecting other priority habitats, especially those that would otherwise he	
	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.	
	Estuary/Estuary-like: 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.	
	Marine/Estuarine Shorelines: 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 we that d has 1 priority habitat = 1 point No habitats = 0 points	

.7	
wetland that best fits) (see p. 84)	
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	
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-	
fringe wetlands within ½ mile points = 5	,
☐ There are at least 3 other wetlands within ½ mile, BUT the connections between them	
are disturbed points = 3	
☐ The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe	
wetlands within ½ mile points = 3	
There is at least 1 wetland within ½ mile.	
There are no wetlands within $\frac{1}{2}$ mile.	
H 2. TOTAL Score -opportunity for providing habitat	,
Add the scores in the column above	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	4

# **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
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	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	20.54
Vegetated, and	
With a salinity greater than 0.5 ppt.	
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?	
YES = Category I NO go to SC 1.2	
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	
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 Spartina 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 Spartina in determining	
the size threshold of 1 acre.	
At least % of the landward edge of the wetland has a 100 ft buffer of	
shrub, forest, or un-grazed or un-mowed grassland.	
The wetland has at least 2 of the following features: tidal channels,	
depressions with open water, or contiguous freshwater wetlands.	

Natura Progra state T SC 2	Natural Heritage Wetlands (see p. 87)  I Heritage wetlands have been identified by the Washington Natural Heritage m/DNR as either high quality undisturbed wetlands or wetlands that support hreatened, Endangered, or Sensitive plant species.  I Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)  information from Appendix D or accessed from WNHP/DNR web site   YES — contact WNHP/DNR (see p. 79) and go to SC 2.2	
	1 L3 _ = collact with 17Divik (see p. 73) and go to 3C 2.2 NO _	
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?	
	YES = Category I	
002		
	Bogs (see p. 87)	
	he wetland (or part of the wetland) meet both the criteria for soils and	
	tion in bogs? Use the key below to identify if the wetland is a bog. If you	
	r yes you will still need to rate the wetland based on its functions.	
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 ☐ - go to Q. 3 No ☒ go to Q. 2	
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 ☐ - go to Q. 3 No ☒ - Is not a bog for purpose of rating	
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 Is a bog for purpose of rating No so 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.	
4.	Is the wetland forested (> 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 (> 30% coverage of the total shrub/herbaceous cover)?	
	YES = Category I NO Is not a bog for purpose of rating	

SC 4.0 Forested Wetlands (see p. 90)  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? If you answer yes you will still need to rate the wetland based on its functions.  Old-growth forests: (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.	
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.	
Mature forests: (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 that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.  ■ YES = Category I	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?  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  The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)  YES = Go to SC 5.1 NO not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions?  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).  At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  The wetland is larger than 1/10 acre (4350 square feet)  YES = Category 1  NO = Category II	

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:	
<ul> <li>Long Beach Peninsula – lands west of SR103</li> </ul>	
Grayland-Westport- lands west of SR 105	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
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	N7 / 4
on p. 1,	N/A
If you answered NO for all types enter "Not Applicable" on p. 1.	

#### DRAFT WETLAND RATING FORM - WESTERN WASHINGTON

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

Location: SEC: <u>6</u> TWNSHP: <u>9N</u> RNGE: <u>1E</u>, <u>W.M.</u> (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 S	SUMMARY OF RATING		
Category based on FUNCTIO	ONS provided by wetland		
1 II III _X	IV		
Category I = Score >70	Score for Water Quality Functions	18	
Category II = Score 51-69	Score for Hydrologic Functions	10	
Category III = Score 30-50 Category IV = Score < 30	Score for Habitat Functions	19	
	TOTAL Score for functions	47	
Category based on SPECIAL CHARACTERISTICS of wetland  I Does not Apply X			
Final Category (choose the "highest" category from above)			

#### Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	4 4 3 1 1
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. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Unknown
SP2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		Unknown
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		Unknown
SP4. 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.		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 on is being kept in this revision. To maintain consistency wetland is kept. Please note, however, that the nd II estuarine wetlands have changed (see pp. 6 and 9).	wetland boundary. Use the following table to identify the ap if you have several HGM classes present within your wetlan that is recommended in the second column represents 10% of being rated. If the area of the second class is less than 10%	d. NOTE: Use this table only if the class or more of the total area of the wetland
precipitation is only source (>90%) of water to it	HGM Classes Within a Delineated Wetland Boundary	Class to Use in Rating
nd class is Flats	Slope + Riverine	Riverine
wetland, use the form for Depressional wetlands.	Slope + Depressional	Depressional
•	Slope + Lake-fringe	Lake-fringe
; criteria?	Depressional + Riverine along stream within boundary	Depressional
is on the shores of a body of open water (without any	Depressional + Lake-fringe	Depressional
at least 20 acres (8 ha) are permanently inundated	Salt Water Tidal Fringe and any other class of freshwater	Treat as ESTUARINE under
area is deeper than 6.6 ft (2 m)?	wetland	wetlands with special
		alana atanistia a

class is Lake-fringe (Lacustrine Fringe) riteria?

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	The state of the state of	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions	to improve	
	water quality	30)	1
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	2
	Wetland has an unconstricted surface outlet	points = 1	2
	Wetland is flat and has no obvious outlet and/or outlet is a ditch	points = 1	
$ \mathbf{D} $	D 1.2 The soil 2 inches below the surface is clay, organic, or smells an	OXIC	
	(hydrogen sulfide or rotten eggs).		
	YES NO	points = 4	0
		points = 0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or	points = 5	
	Wetland has persistent, ungrazed, vegetation > = 95% of area Wetland has persistent, ungrazed, vegetation > = 1/2 of area	points $= 3$	
	Wetland has persistent, ungrazed, vegetation > = 1/2 of area  Wetland has persistent, ungrazed vegetation > = 1/10 of area	points = 1	
	Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
Б	D1.4 Characteristics of seasonal ponding or inundation.	pomis – o	
D	This is the area of the wetland that is ponded for at least 2 months, is	but dries out	
	sometime during the year. Do not count the area that is permanently		
	Estimate area as the average condition 5 out of 10 yrs.	ponaca.	
	Area seasonally ponded is > ½ total area of wetland	points = 4	2
	Area seasonally ponded is > 1/4 total area of wetland	points = 2	2
	Area seasonally ponded is < 1/4 total area of wetland	points $= 0$	
	NOTE: See text for indicators of seasonal and permanent inundatio	n.	
D	Total for D 1 Add the points in the	boxes above	9
D	D 2. Does the wetland have the opportunity to improve water quali	ty? (see p. 44)	
	Answer YES if you know or believe there are pollutants in groundw	ater or surface	
	water coming into the wetland that would otherwise reduce water qu		
	streams, lakes or groundwater downgradient from the wetland? Note	which of the	
	fo <u>llo</u> wing conditions provide the sources of pollutants.		
	Grazing in the wetland or within 150 ft		
	Untreated stormwater discharges to wetland		
	Tilled fields or orchards within 150 ft of wetland		
	A stream or culvert discharges into wetland that drains develor	ed areas,	
	residential areas, farmed fields, roads, or clear-cut logging		
	Residential, urban areas, golf courses are within 150 ft of wetla	ınd	multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen		
	Other		2
	YES multiplier is 2 NO multiplier is 1	D2	=
D	TOTAL - Water Quality Functions Multiply the score from D1 by		18
	Add score to	abte on p. I	

D	Depressional and Flats Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce	
SATE	flooding and stream degradation	
	D 3. Does the wetland have the potential 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	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	
	Estimate the height of ponding above the bottom of the outlet	
	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	0
	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 $0.5 \text{ ft}$ points = $0$	
D	D 3.3 Contribution of wetland to storage in the watershed	
	Estimate the ratio of the area of upstream basin contributing surface water to the	
	wetland to the area of the wetland itself.	
	The area of the basin is less than 10 times the area of wetland points = 5	2
	The area of the basin is 10 to 100 times the area of the wetland points $= 3$	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	Total for D 3 Add the points in the boxes above	5
D	D 4. Does the wetland have the opportunity 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	ľ
	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.	
	Note which of the following indicators of opportunity apply.	
	Wetland is in a headwater of a river or stream that has flooding problems	
	Wetland drains to a river or stream that has flooding problems	lain li
	Wetland has no outlet and impounds surface runoff water that might	multiplie
	otherwise flow into a river or stream that has flooding problems	
	☐ OtherNO multiplier is 2 ☐ NO multiplier is 1	2
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	
υ	Add score to table on p. 1	10
	Thu Score to those 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 potential 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 Depressions cover > 1/2 area of wetland points = 4	
	Depressions present but cover < 1/2 area of wetl 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 of 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.  Grazing in the wetland or within 150ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 feet of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft of wetland 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  Other  YES multiplier is 2 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	

R Riverine and Freshwater Tidal Fringe Wetlands Points HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion R 3. Does the wetland have the potential to reduce flooding and erosion? (see p. 54) 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 = 9If the ratio is between 10-20 points = 6If the ratio is 5- <10 points = 4If the ratio is 1- < 5points = 2If the ration is <1 points = 1R | 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 = 7Forest or shrub > 1/10 area OR Emergent plants > 1/3 area points = 4Vegetation does not meet above criteria points = 0R Add the points in the boxes above 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. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other multiplier (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.) YES multiplier is 2 NO multiplier is 1 TOTAL - Hydrologic Functions 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		
T	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  points = 1		
	Vegetation is less than 6 ft wide points = 0		
	L 1.2 Characteristics of the vegetation in the wetland: 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.		
	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 opportunity 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. Note which of		
	the following conditions provide the sources of pollutants.		
	Wetland is along the shores of a lake or reservoir that does not meet water		
	quality standards Grazing in the wetland or within 150ft		
	Polluted water discharges to wetland along upland edge		
	Tilled fields or orchards within 150 feet of wetland		
	Residential or urban areas are within 150 ft of wetland		
	Parks with grassy areas that are maintained, ballfields, golf courses (all		
	within 150 ft. of lake shore)	multiplier	
	Power boats with gasoline or diesel engines use the lake		
	Other		
	YES multiplier is 2 NO multiplier is 1		
L	TOTAL - Water Quality Functions Multiply the score from L1 by L2		
	Add score to table on p. 1		
	Comments	L	

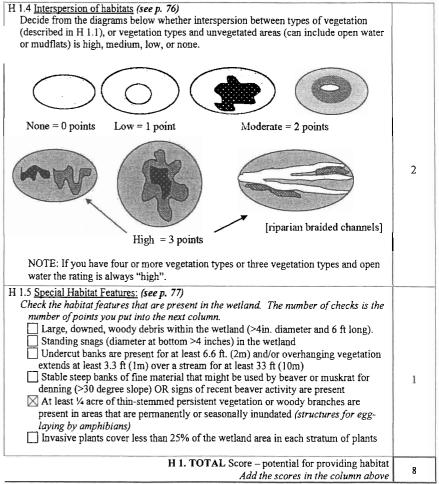
L	Lake-Fringe Wetlands	Points	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
L	L 3. Does the wetland have the potential to reduce shoreline erosion? (see p. 62)		
L	L 3 Average width and characteristics of vegetation along the lakeshore (do not include aquatic bed): (choose the highest scoring description that matches conditions in the wetland):		
	>¾ of fringe vegetation is shrubs or trees at least 33 ft (10m wide) points = 6 >¾ 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 opportunity 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.  There are human structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion.  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  Other	multipli	
/	YES multiplier is 2 NO multiplier is 1		
L	TOTAL – Hydrologic Functions Multiply the score from L 3 by L 4  Add score to table on p. 1		
	Comments		

S	Slope Wetlands	Points			
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to				
$\overline{\mathbf{s}}$	S 1. Does the wetland have the potential 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, ofganic, or smells anoxic				
	(hydrogen sulfide or rotten eggs).				
	YES = 3 points $NO = 0$ points				
$\mathbf{S}$	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, herbaceaous vegetation > 90% of area points = 6				
	Dense, ungrazed, herbaceaous vegetation > 1/2 of area points = 3				
	Dense, woody vegetation > 1/2 of area points = 2				
	Dense, ungrazed, herbaceaous 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				
$\mathbf{S}$	S 2. Does the wetland have the opportunity 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.				
	Grazing in the wetland or within 150 ft				
	Untreated stormwater discharges to wetland				
	Tilled fields or orchards within 150 feet of wetland				
1	Residential, urban areas, or golf courses are within 150 ft upslope of wetland Other				
/	YES multiplier is 2 NO multiplier is 1				
S	TOTAL - Water Quality Functions Multiply the score from S1 by S2				
3	Add score to table on p. 1				
	Aud Store to lubie on D. 1				

Comments

S	Slope Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce	
	flooding and stream erosion	
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	
	Dense, uncut, rigid vegetation > 1/2 area of wetland points = 1	
	More than 1/4 of area is grazed, mowed, tilled or vegetation	
	is not rigid    is not rigid	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood	
J	flows:	
	The slope wetland has small surface depressions that can retain water over at least	
	10% of its area.	
	points = 0	
S	Add the points in the boxes above	
S	S 4. Does the wetland have the opportunity 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.	
	Wetland has surface runoff that drains to a river or stream that has flooding	
	problems	
	Other	multiplier
	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.)  YES multiplier is 2 NO multiplier is 1	
-/	<u> </u>	
8	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4	
1	Add score to table on p. 1	
	Comments	

These questions apply to wetlands of all	HGM classes		Points
HABITAT FUNCTIONS – Indicators that wet	and functions to pro	vide important habitat	
H 1. Does the wetland have the potential to p	orovide habitat for	many species?	
H 1.1 Vegetation structure (see p. 72)			
Check the types of vegetation classes present		rdin) if the class	
covers more than 10% of the area of the we	tland or ¼ acre.		
Aquatic bed			
∑ Emergent plants     ☐ Scrub/shrub (areas where shrubs have >	200/ 20101		
Forested (areas where trees have >30%			
Forested areas have 3 out of 5 strata (ca		mile harbacaous	2
moss/ground-cover)	nopy, sub-canopy, si	nuos, neroaccous,	2
Add the number of vegetation types that qua	lify If you have:		
	4 types or more	points = 4	
	3 types	points = $2$	
	2 types	points = 1	
	l type	points $= 0$	
H 1.2 Hydroperiods (see p. 73)			
Check the types of water regimes (hydroperi			-
regime has to cover more than 10% of the w	etland or ¼ acre to	count. (See text for	
description of hydroperiods.)			
Permanently flooded or inundated	4 or more types p		
Seasonally flooded or inundated	3 types p		
Occasionally flooded or inundated	2 types p	present points = 1	2
Saturated only		tlamd	
Permanently flowing stream or river in, Seasonally flowing stream or river in, or			
Lake-fringe wetland = 2 points	i adjacent to, the we	tialiu	
Freshwater tidal wetland = 2 points			
H 1.3 Richness of Plant Species (see p. 75)			
Count the number of plant species in the we	tland that cover at le	ast 10 ft <sup>2</sup> . (Different	
patches of the same species can be combined			
You do not have to name the species.		,	
Do not include Eurasian Milfoil, reed cana	rygrass, purple loos	estrife, Canadian	
Thistle.			1
If you counted:	> 19 species	points = 2	1
	5 - 19 species	points = 1	
List species below if you want to:	<5 species	points = 0	



Comments:

H 2. Does the wetland have the opportunity to provide habitat for many species?)	
H 2.1 Buffers (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."  100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer.  (relatively undisturbed also means no grazing)  Noints = 4  50% circumference.  50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >55% circumference.  100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference.  50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water on (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference.  50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >50% circumference.  No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland >95% circumference. Light to moderate grazing, or lawns are OK.  No paved areas or buildings within 50m of wetland for >50% circumference.  Light to moderate grazing or lawns are OK.  Points = 2  Heavy grazing in buffer.  Light does not meet any of the criteria above.  (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)  Points = 1  Points = 1	4
H 2.2 Corridors and Connections (see p. 81)  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.)  XYES = 4 points (go to H 2.3)  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? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?  YES = 2 points (go to H 2.3)  H 2.2.3 Is the wetland:  within 5 mi (8km) of a brackish or salt water estuary OR  within 2 mi of a lake greater than 20 acres?  NO = 0 points	4

Wetland Rating

H 2.4 Wetland Landscape (choose the one description of the landscape around the		
wetland that best fits) (see p. 84)		
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		
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-		
fringe wetlands within $\frac{1}{2}$ mile points = 5	3	
☐ There are at least 3 other wetlands within ½ mile, BUT the connections between them	_	
are disturbed points = 3		
The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe		
wetlands within ½ mile points = 3		
There is at least 1 wetland within $\frac{1}{2}$ mile.		
There are no wetlands within $\frac{1}{2}$ mile. points = 0		
H 2. TOTAL Score -opportunity for providing habitat	11	
Add the scores in the column above		
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1		
, , , , , , , , , , , , , , , , , , ,	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
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.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?  The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt.  YES = Go to SC 1.1	
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?  ☐ YES = Category I	
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  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 Spartina 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 Spartina 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 Spartina in determining the size threshold of 1 acre.  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.  The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	

SC 2.0 Natural Heritage Wetlands (see p. 87)  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.  SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a	
Natural Heritage wetland? (this question is used to screen out most sites	
before you need to contact WNHP/DNR)	
S/T/R information from Appendix D \(\infty\) or accessed from WNHP/DNR web site	
5/1/K information from Appendix D or accessed from WNH2/DNK web site	
YES contact WNHP/DNR (see p. 79) and go to SC 2.2 NO Z	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as	
or as a site with state threatened or endangered plant species?	
YES = Category I	
SC 3.0 Bogs (see p. 87)	
Does the wetland (or part of the wetland) meet both the criteria for soils and	
vegetation in bogs? 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.	
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 go to Q. 3 No 🔀 go to Q. 2	
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 - go to Q. 3 No - Is not a bog for purpose of rating	
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 \[ \] Is a bog for purpose of rating \[ No \[ \] -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.	
4. Is the wetland forested (> 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 (> 30% coverage of the total shrub/herbaceous cover)?	
YES = Category I NO Is not a bog for purpose of rating	

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? If you answer yes you will still need to rate the wetland based on its functions.  Old-growth forests: (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.	
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.	
Mature forests: (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 that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.  □YES = Category I □NO	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)  Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?  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  The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)  YES = Go to SC 5.1 NO not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions?  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).  At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  The wetland is larger than 1/10 acre (4350 square feet)  YES = Category I  NO = Category II	

SC 6.0 Interdunal Wetlands (see p. 93)	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland	
$\bigvee$ YES = Go to SC 6.1 $\bigvee$ 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:	
<ul> <li>Long Beach Peninsula – lands west of SR103</li> </ul>	
<ul> <li>Grayland-Westport- lands west of SR 105</li> </ul>	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
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	N/A
on p. 1.	W/M
If you answered NO for all types enter "Not Applicable" on p. 1.	

# DRAFT WETLAND RATING FORM - WESTERN WASHINGTON

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

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

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

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

#### Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	A 1800
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. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Unknown
SP2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species?  For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.		Unknown
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		Unknown
SP4. 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.		Unknown

# <u>To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.</u>

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
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 XYES - 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	Treat as ESTUARINE under
wetland	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	D Dep	pressional and Flats Wetlands	Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		HYL	DROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	
D 1. Does the wetland have the <u>potential</u> to improve water quality? (see p. 38)			. Does the wetland have the potential to reduce flooding and erosion?	
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 = 1  Wetland is flat and has no obvious outlet and/or outlet is a ditch	3	D D3. W W W	Points = 4 Wetland has no surface water outlet points = 2 Wetland has an intermittently flowing, or highly constricted, outlet points = 1 Wetland has an unconstricted surface outlet points = 0	
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	Estin M TI	.2 Depth of storage during wet periods imate the height of ponding above the bottom of the outlet Marks of ponding are 3 ft or more above the surface The wetland is a "headwater" wetland" points = 7 points = 5	
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 = 1  Wetland has persistent, ungrazed vegetation < 1/10 of area	5	M W M	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  3 Contribution of wetland to storage in the watershed	0
D1.4 Characteristics of seasonal ponding or inundation.  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.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  Points = 2  Area seasonally ponded is < ¼ total area of wetland  points = 0	0	Estin we TI TI TI W	imate the ratio of the area of upstream basin contributing surface water to the vetland to the area of the wetland itself.  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. Total for D 3.  Add the points in the boxes above	5
NOTE: See text for indicators of seasonal and permanent inundation.  Total for D 1  Add the points in the boxes above	8		. Does the wetland have the opportunity to reduce flooding and erosion?	
D 2. Does the wetland have the opportunity 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.  Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	multiplier	A st pr A as 9(	Answer YES if the wetland is in a location in the watershed where the flood torage, 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 20% of the water in the wetland is from groundwater.  Note which of the following indicators of opportunity apply.  Wetland is in a headwater of a river or stream that has flooding problems  Wetland drains to a river or stream that has flooding problems  Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems  Other  YES multiplier is 2 NO multiplier is 1	multiplier
TOTAL - Water Quality Functions Multiplier is 1	1	D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	

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.  Grazing in the wetland or within 150ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 feet of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft of wetland 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  Other  YES multiplier is 2 NO multiplier is 1	multiplier
R	TOTAL - Water Quality Functions Multiply the score from R1 by R2	
1.	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 potential to reduce flooding and erosion? (see p. 54) 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 points = 6 If the ratio is between 10-20 If the ratio is 5- <10 points = 4 If the ratio is 1- <5 points = 2If the ration is <1 points = 1 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 = 7Forest or shrub > 1/10 area OR Emergent plants > 1/3 area points = 4Vegetation does not meet above criteria points = 0Add the points in the boxes above 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. There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other multiplier (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.) YES multiplier is 2 NO multiplier is 1 R TOTAL - Hydrologic Functions Multiply the score from R3 by R4 Add score to table on p. 1

L	Lake-Fringe Wetlands		Points
	WATER QUALITY FUNCTIONS - Indicators that wetland function	ns to improve	
	water quality		
L	L 1. Does the wetland have the potential to improve water quali	ty? (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: choose the ap		
	description that results in the highest points, and do not include t		
	your estimate of coverage. In this case the herbaceous plants car		
	dominant form (called emergent class) or as an understory in a s	hrub or forest	
	community.		
	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	
1	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 opportunity to improve water qu	uality? (see p. 61)	
3	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 pollut	ed. Note which of	
	the following/conditions provide the sources of pollutants.		
	Wetland is along the shores of a lake or reservoir that does	not meet water	
	quality standards		
	Grazing in the wetland or within 150ft		
3	Polluted water discharges to wetland along upland edge		
	Tilled fields or orchards within 150 feet of wetland		
	Residential or urban areas are within 150 ft of wetland		
	Parks with grassy areas that are maintained, ballfields, golf	courses (all	141.11
	within 150 ft. of lake shore)		multiplier
	Power boats with gasoline or diesel engines use the lake		
	Other Other NO multiplier is 1		
_		ara from I 1 hv. I 2	
L		ore from L1 by L2 to table on p. 1	
	Aaa score	io iuoie on p. 1	

Comments

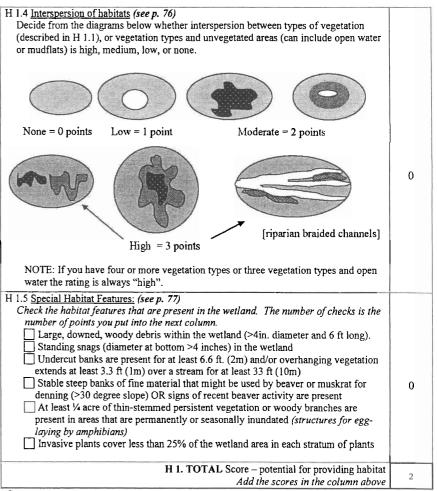
L	Lake-Fringe Wetlands	Points	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion		
L	L 3. Does the wetland have the potential to reduce shoreline erosion? (see p. 62)		
L	L 3 Average width and characteristics of vegetation along the lakeshore (do not include 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		
	The bound of the position of the box doore		
L	L 4. Does the wetland have the opportunity 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.  There are numan structures and activities along the upland edge of the wetland (buildings, fields) that can be damaged by erosion.  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  Other	multiplie	
/	☐YES multiplier is 2 ☐NO multiplier is 1		
L	TOTAL – Hydrologic Functions Multiply the score from L 3 by L 4  Add score to table on p. 1		
	Comments		

S	Slope Wetlands	Points				
10/2	WATER QUALITY FUNCTIONS - Indicators that wetland functions to					
13	improve water quality					
$\mathbf{S}$	S 1. Does the wetland have the potential 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 $MO = 0$ 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, herbaceaous vegetation > 90% of area points = 6					
	Dense, ungrazed, herbaceaous vegetation > 1/2 of area points = 3					
	Dense, woody vegetation > 1/2 of area points = 2					
	Dense, ungrazed, herbaceaous vegetation > 1/4 of area points = 1					
	Does not meet any of the criteria above for vegetation points = 0					
S	Total for S / Add the points in the boxes above					
S	S 2. Does the wetland have the opportunity 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.					
,	Grazing in the wetland or within 150 ft					
/	Untreated stormwater discharges to wetland					
	Tilled fields or orchards within 150 feet of wetland					
	Residential, urban areas, or golf courses are within 150 ft upslope of wetland					
	Other					
	YES multiplier is 2 NO multiplier is 1					
$\mathbf{S}$	TOTAL - Water Quality Functions Multiply the score from S1 by S2					
	Add score to table on p. 1					

Comments

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 welland.  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)  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 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  Add the points in the boxes above  S 4. Does the wetland have the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems  Other  Arswer 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1	S	Slope Wetlands	Points
S 3. Does the wetland have the potential to reduce flooding and erosion?  (see p. 68)  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), of dense enough, to remain erect during surface flows)  Dense, uncut, rigid vegetation >1/2 area of wetland points = 6  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 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  Add the points in the boxes above  S 4. Does the wetland have the opportunity 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.  We fland has surface runoff that drains to a river or stream that has flooding problems  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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
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 welland.  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)  Dense, uncut, rigid vegetation >1/2 area of wetland  Dense, uncut, rigid vegetation >1/4 area of wetland  Dense, uncut, rigid vegetation >1/4 area of wetland  More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid  Dense, uncut, rigid vegetation >1/4 area of wetland  More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid  Dense, uncut, rigid vegetation >1/4 area of wetland  Dense, uncut, rigid vegetation >1/2 area of wetland  points = 3  Dense, uncut, rigid vegetation >1/2 area of wetland  points = 1  More than 1/4 of area is grazed, mowed, tilled or vegetation  PES points = 0  Add the points in the boxes above  S 4. Does the wetland has small surface depressions that can retain water over at least 10% of its area.  YES points = 0  Add the points in the boxes above  S 4. Does the wetland have the opportunity to reduce flooding and erosion?  (see p. 70)  Is the wetland have the opportunity to reduce flooding and erosion?  (see p. 70)  Is the wetland have the opportunity to reduce flooding and erosion?  (see p. 70)  Is the wetland has surface depressions that can retain water over at least 10% o	S		
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)  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 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  Add the points in the boxes above  S 4. Does the wetland have the opportunity 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.  We fland has surface runoff that drains to a river or stream that has flooding problems  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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1	-		
Dense, uncut, rigid vegetation covers >90% of area of the wetland.  (Stems of plants should be thick enough (usually >1/8 in), of dense enough, to remain erect during surface flows)  Dense, uncut, rigid vegetation >1/2 area of wetland  Dense, uncut, rigid vegetation >1/4 area of wetland  Dense, uncut, rigid vegetation >1/4 area of wetland  More than 1/4 of area is grazed, mowed, tilled or vegetation  is not rigid  Dense, uncut, rigid vegetation >1/4 area of wetland  More than 1/4 of area is grazed, mowed, tilled or vegetation  is not rigid  Dense, uncut, rigid vegetation >1/2 area of wetland  Densis =0  S 3.2 Characteristics of flood  Boolits =0  Add the point	S	storms. Choose the points appropriate for the description that best fit conditions	
(Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows)  Dense, uncut, rigid vegetation > 1/2 area of wetland  Dense, uncut, rigid vegetation > 1/4 area of wetland  Dense, uncut, rigid vegetation  Dense, u			
remain erect during surface flows)  Dense, uncut, rigid vegetation > 1/2 area of wetland  Dense, uncut, rigid vegetation > 1/4 area of wetland  Dense, uncut, rigid vegetation > 1/4 area of wetland  Dense, uncut, rigid vegetation > 1/4 area of wetland  More than 1/4 of area is grazed, mowed, tilled or vegetation  is not rigid  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  Add the points in the boxes above  S 4. Does the wetland have the opportunity 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.  We land has surface runoff that drains to a river or stream that has flooding problems  Other  Asswer 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
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 3.2 Characteristics of slope wetland that folds 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  Add the points in the boxes above  S 4. Does the wetland have the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems  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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0  S 3.2 Characteristics of slope wetland that folds 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  Add the points in the boxes above  S 4. Does the wetland bave the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems  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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1		Dense, uncut, rigid vegetation >1/2 area of wetland points = 3	
is not rigid points = 0  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  Add the points in the boxes above  S 4. Does the wetland bave the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems  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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
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  Add the points in the boxes above  S 4. Does the wetland bave the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1		More than 1/4 of area is grazed, mowed, tilled or vegetation	
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  Add the points in the boxes above  S 4. Does the wetland have the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1		is not rigid points = 0	
The slope wetland has small surface depressions that can retain water over at least 10% of its area.  YES points = 2 NO points = 0  Add the points in the boxes above  S 4. Does the wetland bave the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1	S		
10% of its area.   YES   points = 2   NO   points = 0			
NO points = 0			
Add the points in the boxes above  S 4. Does the wetland have the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems  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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1		, and points 2	
S 4. Does the wetland have the opportunity 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.  Wetland has surface runoff that drains to a river or stream that has flooding problems  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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1	S		
(see p. 70)	S	S 4. Does the wetland have the opportunity to reduce flooding and erosion?	-
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.  Wetland has surface runoff that drains to a river or stream that has flooding problems 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	U		
provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.  We fland has surface runoff that drains to a river or stream that has flooding problems 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
We fland has surface runoff that drains to a river or stream that has flooding problems 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
We fland has surface runoff that drains to a river or stream that has flooding problems 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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1		or excessive and/or erosive flows? Note which of the following conditions apply.	
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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
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.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
a seep that is on the downstream side of a dam.)  YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1		, <u>, , , , , , , , , , , , , , , , , , </u>	multiplier
YES multiplier is 2 NO multiplier is 1  TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			Į
TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4  Add score to table on p. 1			
Add score to table on p. 1	/		
•	S		
		Add score to table on p. 1	
		Comments	

These questions apply to wetlands of al	l HGM classes		Points
HABITAT FUNCTIONS - Indicators that wet	land functions to prov	ride important habitat	
H 1. Does the wetland have the potential to	provide habitat for n	nany species?	
H 1.1 Vegetation structure (see p. 72)  Check the types of vegetation classes present covers more than 10% of the area of the well Aquatic bed  Emergent plants  Scrub/shrub (areas where shrubs have > Forested (areas where trees have > 30%  Forested areas have 3 out of 5 strata (camoss/ground-cover)  Add the number of vegetation types that que	etland or ¼ acre.  30% cover)  cover)  nopy, sub-canopy, sh		0
	4 types or more	points = 4	
	3 types	points = 2	
	2 types	points = 1	
	1 type	points = 0	
H 1.2 Hydroperiods (see p. 73)  Check the types of water regimes (hydroper regime has to cover more than 10% of the water description of hydroperiods.)  Permanently flooded or inundated  Seasonally flooded or inundated  Occasionally flooded or inundated  Saturated only  Permanently flowing stream or river in Seasonally flowing stream or river in Lake-fringe wetland = 2 points  Freshwater tidal wetland = 2 points  H 1.3 Richness of Plant Species (see p. 75)	4 or more types p 3 types p 2 types p , or adjacent to, the w	resent points = 3 resent points = 2 resent points = 1 retland	
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			1
List species below if you want to:	<5 species	points = 0	



Comments:

H 2. Does the wetland have the opportunity to provide habitat for many species?)	
H 2.1 Buffers (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."	
≥ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>95% of circumference. No developed areas within undisturbed part of buffer.	
(relatively undisturbed also means no grazing) Points = 5	
100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>50% circumference. Points = 4	
50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>95% circumference. Points = 4	
100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water	
>25% circumference. Points = 3	5
50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water	ا د
for $> 50\%$ circumference. Points = 3	
If buffer does not meet any of the three criteria above	
☐ No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland	
> 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2	
No paved areas or buildings within 50m of wetland for >50% circumference.	
Light to moderate grazing or lawns are OK  Points = 2	
Heavy grazing in buffer. Points = 1	
Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference	
(e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) Points = 0	
Buffer does not meet any of the criteria above.  Points = 1	
H 2.2 Corridors and Connections (see p. 81)	
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).	
$YES = 4 \text{ points } (go \text{ to } H \text{ 2.3}) \qquad \text{NO = go to } H \text{ 2.2.2}$	
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	4
25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor	
as in the question above?	
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 (>40 acres) OR	
within 1 mi of a lake greater than 20 acres?	
YES = 1 point  NO = 0 points	

H 2.3	Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	sich of the following priority habitats are within 330ft (100m) of the wetland?	
(see	e text for a more detailed description of these priority habitats)	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements	
-	of both aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth forests: (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) $>$ 81 cm (32 in) dbh or $>$ 200 years of age.	
	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
	cover may be less that 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.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants)	
	where grasses and/or forbs form the natural climax plant community.	
	Talus: 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.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
	canopy coverage of the oak component of the stand is 25%.	
	Urban Natural Open Space: A priority species resides within or is adjacent to the open	0
	space and uses it for breeding and/or regular feeding; and/or the open space functions as	
	a corridor connecting other priority habitats, 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.	
	Estuary/Estuary-like: 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.	
	Marine/Estuarine Shorelines: 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	

H 2.4 Wetland Landscape (choose the one description of the landscape around the	
wetland that best fits) (see p. 84)	
☐ 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	
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-	
fringe wetlands within ½ mile points = 5	5
☐ There are at least 3 other wetlands within ½ mile, BUT the connections between them	
are disturbed points = 3	
The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe	
wetlands within ½ mile points = 3	
There is at least 1 wetland within $\frac{1}{2}$ mile. points = 2	
There are no wetlands within ½ mile. points = 0	
H 2. TOTAL Score -opportunity for providing habitat	14
Add the scores in the column above	14
Total Score for Habitat Functions - add the points for H 1, H 2 and record the result on p. 1	
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# 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
Check off any criteria that apply to the wetland. Select the appropriate Category	manuseowa S
(from dropdown menu in Category column) when the appropriate criteria are met.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt.	
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?	
YES = Category I NO go to SC 1.2	
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	
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 Spartina 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 Spartina in determining	
the size threshold of 1 acre.	
At least ¾ of the landward edge of the wetland has a 100 ft buffer of	
shrub, forest, or un-grazed or un-mowed grassland.	
The wetland has at least 2 of the following features: tidal channels,	
depressions with open water, or contiguous freshwater wetlands.	
	era chier is an

SC 2.0 Natural Heritage Wetlands (see p. 87)  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.  SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)  S/T/R information from Appendix D  or accessed from WNHP/DNR web site	
YES contact WNHP/DNR (see p. 79) and go to SC 2.2 NO 🔀	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as	
or as a site with state threatened or endangered plant species?	
YES = Category I	1
SC 3.0 Bogs (see p. 87)	1
Does the wetland (or part of the wetland) meet both the criteria for soils and	1
vegetation in bogs? Use the key below to identify if the wetland is a bog. If you	1
answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the wetland have organic soil horizons (i.e. layers of organic soil), either</li> </ol>	1
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 ☐ - go to Q. 3 No 🔯 go to Q. 2	
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 ☐ - go to Q. 3 No ☒ - Is not a bog for purpose of rating	
3. Does the wetland have more than 70% cover of mosses at ground level, AND	1
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	1 1
herbaceous cover consists of species in Table 3)?	
Yes ☐— Is a bog for purpose of rating No ☐—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.	
4. Is the wetland forested (> 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 (> 30% coverage of the total shrub/herbaceous cover)?	
YES $\square$ = Category I NO $\square$ Is not a bog for purpose of rating	
1 722 - CateBoth 1 MO T 12 Hot a not for himbore of faithf	
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Does the wetlands (see p. 90)  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? If you answer yes you will still need to rate the wetland based on its functions.  Old-growth forests: (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.	
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.	
Mature forests: (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 that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.  □YES = Category I  NO	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)  Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?  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  The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)  YES = Go to SC 5.1 NO \( \subseteq \) not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions?  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).  At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.  The wetland is larger than 1/10 acre (4350 square feet)  YES = Category I  NO = Category II	

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:	
<ul> <li>Long Beach Peninsula – lands west of SR103</li> </ul>	
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 westend falls into several categories, and record	
on p. 1.	N/A
16 1310 6 114	