

# Sewall Wetland Consulting, Inc.

PO Box 880 Fall City, WA 98024 Phone: 253-859-0515

September 19, 2019

Richard Holub 27932 East Main Street Redmond, Washington 98053

RE: Critical Area Report – Parcel #3125079010 King County, Washington SWC Job #19-165

Dear Richard,

This report describes our observations of jurisdictional wetlands, streams and buffers on or within 200' of the northern half of Parcel #3125079010, located at 27933 Eats Main Street, in unincorporated King County, Washington (the "site").

The site contains an existing single family home with several small outbuildings including a well house. Severla gravel roads pass onto the site from the ravel road along its southern side. Historically the site was an egg farm and much of the open lawn/pasture area was part of this historic farming activity.

# METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site on September 19, 2019. The site was reviewed using methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), and the *Western Mountains, Valleys and Coast region Supplement* (Version 2.0) dated June 24, 2010, as required by the US Army Corps of Engineers. Soil colors were identified using the 1990 Edited and Revised Edition of the Munsell Soil Color Charts (Kollmorgen Instruments Corp. 1990).

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Above: iMap Vicinity Map of the site

# **OBSERVATIONS**

# Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data and the King County iMap website with wetland and stream layers activated and WDNR Fpars stream mapping website.

# King County iMap

The King County iMap website with wetland and stream layers activated portrays an unclassified stream along the north east side of the site, as well as a large wetland off-site to the east. Several abutting properties are shaded red, indicating a "notice on title" of critical areas.



Above King County imam with lidar and environmental layers activated.

# Soil Survey

According to the NRCS Soil Mapper, the entire area of the majority of the site is moderately well drained Alderwood gravelly loam soils. Th northeast corner is somewhat excessively drained Everett very sandy gravelly loams. Neither of these soil types are considered wetland, or hydric soils.

# National Wetlands Inventory (NWI)

According to the NWI map for the site, there are no wetlands on the site. A large wetland is depicted off-site to the east.

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Above: USDA Soil Survey Map of the site



Above: National Wetlands Inventory Map of the site.

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# WDNR Fpars Stream Mapping

According to the WDNR Fpars stream mapping website, there are no streams on or near the site. The closest streams is a Type F stream located 300' or more to the east of the site.



Above: WDNR stream mapping for area of the site

# **Field observations**

# Uplands

As previously described, the site contains a single-family home with several outbuildings, landscaped lawn areas and a large pasture area. The site slopes from a high point on the southwest to a low on the northeast. The site has scattered douglas fir, western red cedar, big leaf maple, red alder and Oregon ash in clumps and around the perimeter. Severla patches of red-osier dogwood and some reed cananry grass were observed along the north and east side of the pasture, but soils were dry upland soils in these areas.

Soils in throughout the upland area at the north end of the site are sandy loams to clay loams with colors ranging from 10YR 3/2-3/4.

A single slope wetland originating around the existing well house was delineated on the site. An off-site wetland to the east has a buffer which also extends onto the site. It should be noted that the stream that is mapped by the County does not exists. No stream or channel was noted on the northeast side of the site nor anywhere else on the site.

Below is a description of these wetlands;

# Wetland A

Wetland A is a small slope type wetland originating in the hillside between the gravel road to the south and the existing home. This also borders the existing well house and water from the wetland seeps out a bit into the lawn before being intersected by a shallow ditch which directs any surface water in the wetland to the roadside ditch.

This wetland was flagged with blue flags A1-A8 (gps points 284-291). This wetland is vegetated with an overstory of red alder with understory species including twinberry, salmonberry, Himalayan blackberry, skunk cabbage, giant horsetail and lady fern.

Soil pits excavated within the wetland revealed a clay loam with few, fine, faint redoximorphic concentrations. Soils were saturated to the surface during our late summer review of the site.

Using the 2004 WADOE Wetland Rating system and rating the wetland as a depressional type wetland, this wetland scored a total of 33 points with 15 for habitat. This indicates a Category III wetland. A Category III wetland with <20 habitat points in the rural areas of King County have a 60' buffer measured from the wetland edge. In addition, a 15' BSBL is measured from the edge of the buffer to any structures.



Above: Wetland and buffer location on the site.

# **Off-site (Patterson Creek #11)**

Off-site to the east of the site is a large, complex (300+ acres) wetland associated with Patterson Creek. This wetland is identified as "Patterson Creek #11" in the 1990 King County Wetland Inventory.

Using the 2004 WADOE Wetland Rating system and rating the wetland as a depressional type wetland, this wetland scored a total of 77 points with 3 for habitat. This indicates a Category I wetland. A Category I wetlands in the rural areas of King County have a 225' buffer measured from the wetland edge. In addition, a 15' BSBL is measured from the edge of the buffer to any structures.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at <u>esewall@sewallwc.com</u>.

Sincerely, Sewall Wetland Consulting, Inc.

# Sent

Ed Sewall Senior Wetlands Ecologist PWS #212

Attached: Rating Form & data sheets

# REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

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Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

Ara on east edge of pasture

WET	LAND DE	TERMINATION	DATA FOR	M – Westerr	Mountai	ns, Valleys, ar	nd Coast Regio	n
Project/Site:	Holuk	>		City/County:	King	State: WA	Sampling Date: Sampling Point:	9-13-19 DP#1
Investigator(s):	Ed	Semy		Section, Towns	hip, Range:			*****
Landform (hillslope, te	rrace, etc.): _			Local relief (co	ncave, conve	ex, none):	Slo	pe (%):
Subregion (LRR):			Lat:		Lor	ıg:	Datu	m:
Soil Map Unit Name: _						NWI classi	ication:	······································
Are climatic / hydrolog	ic conditions	on the site typical fo	r this time of y	ear? Yes	No	_ (If no, explain in	Remarks.)	
Are Vegetation	, Soil	, or Hydrology	significantly	/ disturbed?	Are "Norm	nal Circumstances"	present? Yes	No
Are Vegetation	, Soil	or Hydrology	naturally pr	oblematic?	(If needed	l, explain any answ	ers in Remarks.)	
CUMMADY OF E	NONCE							-

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	Is the Sampled Area within a Wetland?	Yes	No
Remarks:				

#### **VEGETATION – Use scientific names of plants.**

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1.				That Are OBL, FACW, or FAC: (A)
2.	-			Total Number of Deminant
3				Species Across All Strata: (B)
4				
		= Total Co	vor	Percent of Dominant Species 100
Sapling/Shrub Stratum (Plot size: )				Inat Are UBL, FACW, of FAC: (A/B)
1 Cornue stelariten	50		FACW	Prevalence Index worksheet:
2 Rubis discoh	30		FAC	Total % Cover of: Multiply by:
3				OBL species x 1 =
				FACW species x 2 =
5.				FAC species x 3 =
		= Total Co	ver	FACU species x 4 =
Herb Stratum (Plot size:)			Nec	UPL species x 5 =
1. Phalory andress			TACh	Column Totals: (A) (B)
2				
3				Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5			Addition for the state of the s	Dominance Test is >50%
6			****	Prevalence Index is ≤3.0 <sup>1</sup>
7		****		Morphological Adaptations <sup>1</sup> (Provide supporting
8.		atalataone en définience en	*******	data in Remarks or on a separate sheet)
9	*** *****************		******	Wetland Non-Vascular Plants'
10	**************		*******	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
14				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
<sup>3</sup> <sup>1</sup> <sup>1</sup> <i>an amanduk kun semina menangan pertekan kun semini kun kun seminikan den kun seminikan den kun kun seminikan den seminikan den seminikan seminikan</i>	ini	- Total Ca		be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: )		~ Total Cov	er	
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· · · · · · · · · · · · · · · · · · ·				Vegetation
<b>4.</b>	····	- Tabal C-		Present? Yes No
% Bare Ground in Herb Stratum		= Total Cov	er	
Remarks;				L
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**US Army Corps of Engineers** 

## SOIL

Sampling Point: PP#/

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Histic En	vipedon (A2)		Stripped Matrix	(S6)			Red	Parent Material (TE2)
Black Hi	stic (A3)		Loamy Mucky M	lineral (F1	) (except	MLRA 1)	Othe	r (Explain in Remarks)
Hydroge	n Sulfide (A4)		Loamy Gleved M	Aatrix (F2	)			
Depleted	Below Dark Sur	face (A11)	Depleted Matrix	(F3)	•			
Thick Da	rk Surface (A12)		Redox Dark Sur	face (F6)			<sup>3</sup> Indicator	s of hydrophytic vegetation and
Sandy M	lucky Mineral (S1	)	Depleted Dark S	urface (F	7)		wetlan	d hydrology must be present.
Sandy G	leyed Matrix (S4	)	Redox Depressi	ons (F8)			unless	disturbed or problematic.
<b>Restrictive</b> L	ayer (if present.	); ;						
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High Wa	ter Table (A2)		1, 2, 4A	, and 4B)				4A, and 4B)
Saturatio	on (A3)		Salt Crust (	B11)			Dr	ainage Patterns (B10)
Water M	arks (B1)		Aquatic Inv	ertebrate	s (B13)		Dr	y-Season Water Table (C2)
Sedimen	t Deposits (B2)		Hydrogen S	Sulfide Oc	for (C1)		Sa	turation Visible on Aerial Imagery (C9)
Drift Dep	osits (83)		Oxidized R	hizosphei	res along	Living Root	ts (C3) Ge	comorphic Position (D2)
Algal Ma	t or Crust (B4)		Presence o	f Reduce	d Iron (C4	l)	Sh	allow Aquitard (D3)
iron Dep	osits (B5)		Recent Iror	Reducti	on in Tilleo	d Soils (C6)	) FA	C-Neutral Test (D5)
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Inundatio	on Visible on Aeri	ial Imagery (E	37) Other (Exp	lain in Re	marks)		Fro	ost-Heave Hummocks (D7)
Sparsely	Vegetated Conc	ave Surface	(88)					
Field Observ	vations:		1					
Surface Wate	er Present?	Yes	No Depth (inc	hes):				
Water Table	Present?	Yes	NoBepth (inc	hes):				
Saturation Pr	esent?	Yes	No Depth (inc	hes):		Wetla	ind Hydrology	Present? Yes No
(includes cap	illary fringe)	am ao	anima mak and-t-	hatas			f muniletter	
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D								
Kemarks:								1 4
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## WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site:	_ City/County:Mmy	1000-	Sampling Date: 9-13-17
Applicant/Owner:	, 	State:	Sampling Point:
Investigator(s):	Section, Township, Range:	Nalisanna marai shiji mayana maja ka agar nya	an de Manuel an la capacita de la companya de la co
Landform (hillslope, terrace, etc.):	Local relief (concave, convex	(, none):	Slope (%):
Subregion (LRR): Lat:	Long	F	Datum:
Soil Map Unit Name:		NWI classific	ation:
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes No	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significan	tly disturbed? Are "Norma	al Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed,	explain any answe	rs in Remarks.)

#### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes No
Remarks:			

#### **VEGETATION – Use scientific names of plants.**

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	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
				That Are UBL, FACW, or FAC: (A)
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3.			******	Species Across All Strata: (B)
4.				Percent of Dominant Species
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<b>2</b>	***			
Herb Stratum (Plot size: )			ver .	FACU species X4 =
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3				Column Totals: (A) (B)
3				Prevalence index = B/A =
	<del></del>			Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3 0 <sup>1</sup>
7				Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
		****	*****	Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
*** **		+ Total Co		be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)		- Total Cov		
1				Hydrophytic
2.				Vegetation
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Remarks:				

#### SOIL

OIL			Sampling Point:
Profile Desc	cription: (Describe to the de	epth needed to document the indicator or confirm	the absence of indicators.)
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ydric Soil	Indicators: (Applicable to a	II LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
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Listic Er	ninedon (A2)	Stringed Matrix (SS)	Pod Parent Material (TE2)
Diesk Li		t norme Musice Minoral (E1) (avaged MI DA 4)	Red Faterit Material (TF2)
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Hydroge	n Sunde (A4)	Loamy Gleyed Matrix (F2)	
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Sandy N	lucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
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estrictive l	Layer (if present):		
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<b>DROLO Vetland Hyd rimary Indic</b> Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	<b>GY</b> drology Indicators: cators (minimum of one requir Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	red; check all that apply) Water-Stained Leaves (B9) (except MLR 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roof Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6)	Secondary Indicators (2 or more required)         RA
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<b>DROLO Vetland Hyd imary Indic</b> Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsedu	GY drology Indicators: ators (minimum of one requir Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Imagery (	red; check all that apply) — Water-Stained Leaves (B9) (except MLR 1, 2, 4A, and 4B) — Salt Crust (B11) — Aquatic Invertebrates (B13) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres along Living Roo — Presence of Reduced Iron (C4) — Recent Iron Reduction in Tilled Soils (C6 — Stunted or Stressed Plants (D1) (LRR A) (B7) — Other (Explain in Remarks)	Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         ts (C3)       Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
<b>DROLO (etiand Hyd imary Indic</b> Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	GY drology Indicators: cators (minimum of one requir Water (A1) Mer Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( v Vegetated Concave Surface	red; check all that apply) — Water-Stained Leaves (B9) (except MLR 1, 2, 4A, and 4B) — Salt Crust (B11) — Aquatic Invertebrates (B13) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres along Living Roo — Presence of Reduced Iron (C4) — Recent Iron Reduction in Tilled Soils (C6 — Stunted or Stressed Plants (D1) (LRR A) (B7) — Other (Explain in Remarks) a (B8)	No       Musture         Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         (C3)       Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
Petland Hydrimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	GY drology Indicators: sators (minimum of one requir Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( vegetated Concave Surface vations:	red; check all that apply) — Water-Stained Leaves (B9) (except MLR 1, 2, 4A, and 4B) — Salt Crust (B11) — Aquatic Invertebrates (B13) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres along Living Roo — Presence of Reduced Iron (C4) — Recent Iron Reduction in Tilled Soils (C6 — Stunted or Stressed Plants (D1) (LRR A) (B7) — Other (Explain in Remarks) a (B8)	No       Mutually         Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         (C3)       Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
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Algal Mag     Iron Dep     Surface     High Wa     Saturatic     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundatic     Sparsely     ield Obsen	GY drology Indicators: cators (minimum of one requir Water (A1) Iter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( vegetated Concave Surface vations: er Present? Yes Present? Yes	red; check all that apply) Water-Stained Leaves (B9) (except MLR 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) a (B8) No Depth (inches):	Mo       Mutually         Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         (C3)       Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
Algal Mag     Iron Dep     Surface     High Wa     Saturatic     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundatic     Sparsely     ield Obsen     urface Water     /ater Table     aturation Pe	GY drology Indicators: cators (minimum of one requires Water (A1) Iter Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( vegetated Concave Surfaces vations: er Present? Yes Present? Yes	red; check all that apply) Water-Stained Leaves (B9) (except MLR 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Mo       Museling         Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         (C3)       Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
Algal Magnitudes Capacity     Algal Magnitudes Capacity     Saturation	GY drology Indicators: cators (minimum of one requires Water (A1) Iter Table (A2) on (A3) larks (B1) nt Deposits (B2) boosits (B3) at or Crust (B4) boosits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( v Vegetated Concave Surfaces vations: er Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes present? Yes	red: check all that apply)  Water-Stained Leaves (B9) (except MLF 1, 2, 4A, and 4B)  Salt Crust (B11)  Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rooi Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): Wetta	Mo       Musture         Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Votland Hyv rimary Indic     Surface     High Wa     Saturatic     Water M     Sedimer     Orift Dep     Algal Ma     Iron Dep     Surface     Inundatic     Sparsely     Ield Obsen     urface Wate     Algae Table     aturation Pe     neludes cap escribe Rec	GY drology Indicators: cators (minimum of one required Water (A1) Iter Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( v Vegetated Concave Surface vations: er Present? Yes Present? Yes	red; check all that apply)  Water-Stained Leaves (B9) (except MLR  1, 2, 4A, and 4B)  Salt Crust (B11)  Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rooi Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): Wetla nonitoring well, aerial photos, previous inspections), in	Mo       Museling         Secondary indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
YDROLO Vetland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely ield Observiourface Water Vater Table saturation Princludes cap lescribe Red	GY drology Indicators: cators (minimum of one required Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( y Vegetated Concave Surface vations: er Present? Yes Present? Yes Present? Yes present? Yes present? Yes corded Data (stream gauge, researcher)	red; check all that apply)           Water-Stained Leaves (B9) (except MLR           1, 2, 4A, and 4B)           Salt Crust (B11)           Aquatic Invertebrates (B13)           Hydrogen Sulfide Odor (C1)           Oxidized Rhizospheres along Living Root           Presence of Reduced Iron (C4)           Recent Iron Reduction in Tilled Soils (C6           Stunted or Stressed Plants (D1) (LRR A)           B7)         Other (Explain in Remarks)           a (B8)           No         Depth (inches):           No         Depth (inches):           No         Depth (inches):	Mo       Mutually         Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
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Provident and the second secon	GY drology Indicators: ators (minimum of one requir Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( v Vegetated Concave Surface vations: er Present? Yes Present? Yes present? Yes pillary fringe) corded Data (stream gauge, r	red; check all that apply)  Water-Stained Leaves (B9) (except MLR 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rooi Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): No Depth (inches): Wetta nonitoring well, aerial photos, previous inspections), i	No       Museling         Secondary Indicators (2 or more required)         RA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         (C3)       Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
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DROLO etland Hyd imary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely eld Obsen atrace Wate ater Table aturation Procludes cap escribe Red	GY drology Indicators: ators (minimum of one requir Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial Imagery ( v Vegetated Concave Surface vations: er Present? Yes Present? Yes p	red: check all that apply)  Water-Stained Leaves (B9) (except MLF 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Rooi Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): Wetla nonitoring well, aerial photos, previous inspections), i	Mo

US Army Corps of Engineers

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WETLAND DETERMINATION	I DATA FORM – Wester	n Mountains, Valleys,	and Coast Region
Project/Site: Holub	City/County:	Kry State: Wr	Sampling Date: <u>9-13-19</u> Sampling Point: DPF-3
Investigator(s): El Sent	Section, Town	ship, Range:	
Landform (hillslope, terrace, etc.):	Local relief (co	ncave, convex, none):	Slope (%):
Subregion (LRR):	Lat:	Long:	Datum:
Soil Map Unit Name:			sification:
Are climatic / hydrologic conditions on the site typical	or this time of year? Yes	No (If no, explain	in Remarks.)
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstance	es" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any an	swers in Remarks.)

# SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	Is the Sampled Area within a Wetland?	Yes No
Remarks: MOWL	1 Inun		

## VEGETATION - Use scientific names of plants.

	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species? Status	Number of Dominant Species )
1.			That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3			Species Across All Strata: (B)
4			
		= Total Cover	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)	<del>4</del>		That Are UBL, FACW, OF FAC: (A/B)
1,			Prevalence Index worksheet:
2.			Total % Cover of: Multiply by:
3			OBL species x 1 =
4.			FACW species x 2 =
5		ana matana kana kana kana kana kana kana kana	FAC species x 3 =
		= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)	0	- Er	UPL species x 5 =
1. Pon 2pp	<u> </u>	TAC	Column Totals: (A) (B)
2. Tararein officing	10		
3			Prevalence Index = B/A =
4,			Hydrophytic Vegetation Indicators:
5.			Dominance Test is >50%
6.			Prevalence Index is ≤3.0 <sup>1</sup>
7.			Morphological Adaptations <sup>1</sup> (Provide supporting
8.			data in Remarks or on a separate sheet)
9			Wetland Non-Vascular Plants1
10.			Problematic Hydrophytic Vegetation' (Explain)
11.			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	***	= Total Cover	De presera, uniess disturbed of problematic.
Woody Vine Stratum (Plot size:)	******	- 1000 00101	
1			Hydrophytic
2			Vegetation
		= Total Cover	Present? Yes No
% Bare Ground in Herb Stratum	*******		
Remarks:			anna ann a tha stift a far ann ann ann ann ann ann ann ann ann a

#### SOIL

Chanth	caption. (Describe a					or gornman	UIB anserice	of indicators.)
Uepin	Matrix	A/	Redo	x Features		1	<b>T</b>	D
(inches)	<u>Color (moist)</u>	%	Color (moist)	%	Type	LOC	<u> </u>	Remarks
	1040 516			*****				
14	104n314	/			******		75 2	
			*****************		******		****	an a
		******						
		****				*****		
		-		******			-	
	-				-			
'Type: C=C	oncentration, D=Depl	etion, RM	=Reduced Matrix, CS	=Covered	or Coate	d Sand Gra	ains. <sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applica	bie to all	LRRs, unless other	wise note	d.)		Indicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	I (A1)		Sandy Redox (S	S5)			2 cn	n Muck (A10)
Histic E	pipedon (A2)		Stripped Matrix	(S6)			Red	Parent Material (TF2)
Black Hi	listic (A3)		Loamy Mucky M	lineral (F1	) (except	MLRA 1)	Oth	er (Explain in Remarks)
Hydroge	en Sullide (A4) d Balow Dark Surfrag		Loamy Gleyed I	VIAUTIX (F2)	1			
Thick D	u below Uark SUITACe ark Surface (A12)	(ATT)	Uepieted Matrix	(F3) face (ER)			3Indianta	ce of hydronhytic variation and
Sandy A	Mucky Mineral (S1)		Deniated Dark St	Surface (F0)	7)		n nuicelle wette	no or nyarophysic veyeauon and nd hydrology must be present
Sandy (	Gleved Matrix (S4)		Redox Depress	ions (F8)	• • •		unles	s disturbed or problematic.
Restrictive	Layer (if present):					***	T	
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes No
Remarks						an a		
HYDROLO	GY		andele och by ter dör kan all i er yr henne toksistion i deforetet, unter til get	ana ang ang ting panganga	an a	1996 - Young and a statistic of a st	n di katalah sana marangan katalah katalah saka saka	
Wetland Hy	IGY drology Indicators:		1999 - 1990 In 2014 - 2010 - 1992 - 2014	eneria antipicity, prista attor	الي المراجع ال محمد مراجع المراجع الم	14 Mar Par - Pa 	9.900 - 1.911 - 2.000 - 2.000 - 2.000 - 2.000 - 2.000 - 2.000	
HYDROLO Wetland Hy Primary Indic	IGY drology Indicators: cators (minimum of or	ne require	d; check all that apply	0	999 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940 - 940		Secor	idary Indicators (2 or more required)
HYDROLO Wetland Hy Primary Indic Surface	IGY drology Indicators: cators (minimum of or Water (A1)	ne require	d: check all that appl Water-Stai	() ned Leave	es (89) (e	xcept MLR	Secor	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2,
HYDROLO Wetland Hy Primary India Surface High Wa	IGY drology Indicators: cators (minimum of or Water (A1) ater Table (A2)	ne require	d: check all that apply Water-Stai 1, 2, 4A	() ned Leave <b>, and 48)</b>	es (89) (e	xcept MLR	Secor	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia	IGY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3)	e require	d: check all that appl Water-Stai 1, 2, 4A Sait Crust	/) ned Leave , <b>and 48)</b> (B11)	əs (B9) (e	xcept MLR	<u>Seco</u> r A W	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M	DGY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1)	ne require	d: check all that apple Water-Stai 1, 2, 4A Salt Crust Aquatic Inv	/) ned Leave , and 4B) (B11) vertebrate:	es (89) (e s (813)	xcept MLR	<u>Secor</u> A W D D	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2)
HYDROLO Wetland Hy Primary India Surface High Wa Saturation Water M Sedimen	DGY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)	e require	d: check all that appl Water-Stai 1, 2, 4A Sait Crust Aquatic Inv Hydrogen	/) ned Leave , <b>and 4B)</b> (B11) vertebrate: Sulfide Oc	es (B9) (e a (B13) lor (C1)	xcept MLR	<u>Secor</u> A W D D S	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3)	ne require	d: check all that appl Water-Stai 1, 2, 4A Sait Crust Aquatic Inv Hydrogen Oxidized R	() ned Leave , <b>and 4B)</b> (B11) vertebrate: Sulfide Oc hizospher	es (B9) (e s (B13) lor (C1) es along	xcept MLR	Secor Secor D D D S S S S S S S S S S S S S	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	ne require	d: check all that apply Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of	() ned Leave , <b>and 4B)</b> (B11) vertebrate: Sulfide Od hizospher of Reduce	es (B9) (e e (B13) lor (C1) es along d Iron (C4	xcept MLR Living Root	Secor SA W D D S ts (C3) G S	Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	e require	d: check all that apply Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro	/) ned Leave , and 48) (B11) vertebrate: Sulfide Od hizospher of Reduce n Reductio	es (B9) (e s (B13) lor (C1) es along d Iron (C4 on in Tilleo	xcept MLR Living Root )) J Soils (C6)	<u>Secor</u> <u>A</u> D D S ts (C3) G S ) F.	Indary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	IGY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	e require	d: check all that apple Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or	() ned Leave , and 48) (B11) vertebrate: Sulfide Od hizospher of Reduce n Reductik Stressed	es (B9) (e s (B13) lor (C1) es along d Iron (C4 on in Tiller Plants (D	Living Root	<u>Secor</u> <u>A</u> W D D S (C3) G S S F, R	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	DGY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial In	ne require	d: check all that apple Water-Stai 1, 2, 4A Salt Crust Aquatic Im Hydrogen Oxidized R Presence of Recent Iron Stunted or 7) Other (Exp	() ned Leave (B11) rertebrates Sulfide Od (hizospher of Reduce n Reduction Stressed Itain in Ref	es (B9) (e. s (B13) lor (C1) es along d Iron (C4 n in Tiller Plants (D marks)	Living Root	Secor Secor D D D S S S S S S S S S S S S S	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water N Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Ir y Vegetated Concave	ne require nagery (B Surface (	d: check all that apple Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or 7) Other (Exp B8)	() ned Leave , and 48) (B11) reflebrate: Sulfide Od thizospher of Reduce n Reduce n Reduce Stressed stressed	es (B9) (e s (B13) lor (C1) es along d Iron (C4 on in Tiller Plants (D marks)	Living Root ) J Soils (C6) 1) (LRR A)	Secor Secor D D D S (C3) G S (C3) G S F R F	Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatii Water N Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Ir y Vegetated Concave rvations:	ne require nagery (B Surface (	d: check all that apply Water-Stai 1, 2, 4A Sait Crust Aquatic Inv Hydrogen Oxidized R Presence o Recent Iro Stunted or 7) Other (Exp B8)	() ned Leave , and 4B) (B11) rertebrate: Sulfide Oc hizospher of Reduce n Reductio Stressed lain in Rei	as (B9) (e: a (B13) lor (C1) es along d Iron (C4 on in Tiller Plants (D marks)	Living Root ) d Soils (C6) 1) (LRR A)	Secor Secor D D D S (C3) G S (C3) G S F R F	Indary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatii Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundatii Sparseh Field Obser	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial In y Vegetated Concave rvations: ter Present? Ye	nagery (B Surface (	d: check all that apply Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or 7) Other (Exp B8)	() ned Leave , and 48) (B11) vertebrate: Sulfide Od hizospher of Reduce n Reductio Stressed lain in Rei ches):	es (B9) (e a (B13) lor (C1) es along d Iron (C4 on in Tilleo Plants (D marks)	Living Root	Secor Secor D D D S S S S S S S S S S S S S	Indary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundatia Sparsely Field Obser Surface Water	GY drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial In y Vegetated Concave vations: ter Present? Ye	nagery (B Surface (	d: check all that apply Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or 7) Other (Exp B8) No Depth (inc	() ned Leave , and 48) (B11) vertebrate: Sulfide Oc thizospher of Reduce n Reduction Stressed lain in Rei ches):	es (B9) (e s (B13) lor (C1) es along d Iron (C4 on in Tilleo Plants (D marks)	Living Root J Soils (C6) 1) (LRR A)	Secor Secor D D D S S S S S S S S S S S S S	Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
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HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatii Water N Sedimer Drift Der Algal Ma Iron Der Surface Inundatii Sparsely Field Obser Surface Wate Water Table Saturation P (includes cap Describe Re	Interpretation of the second states of the second s	nagery (B Surface ( ss ss gauge, mo	d: check all that apply Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Aquatic Inv Aquatic Inv Oxidized R Presence C Recent Iro Stunted or 7) Other (Exp B8) No Depth (inc No Depth (inc No Depth (inc	() ned Leave , and 4B) (B11) vertebrate: Sulfide Oc hizospher of Reduce n Reductio Stressed lain in Rei ches): thes): thes):	es (B9) (e: s (B13) lor (C1) es along d Iron (C4 on in Tiller Plants (D marks)	Living Root J Soils (C6) 1) (LRR A) Wetla pections), it	Second           IA             D            D            D            D            S           (C3)             S           (S (C3)             S	Adary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) y Present? Yes No
HYDROLO Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Den Algal Ma Iron Den Surface Inundatia Sparsen Field Obser Surface Water Vater Table Saturation Pr (includes cap Describe Red	OGY         rdrology Indicators:         cators (minimum of or         Water (A1)         ater Table (A2)         on (A3)         Marks (B1)         nt Deposits (B2)         posits (B3)         at or Crust (B4)         posits (B5)         Soil Cracks (B6)         ion Visible on Aerial Ir         y Vegetated Concave         rvations:         ter Present?       Ye         Present?       Ye         pillary fringe)       ye         corded Data (stream)	nagery (B Surface ( ss gauge, mo	d: check all that apply Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or 7) Other (Exp B8) No Depth (inc No Depth (inc Depth (inc Depth (inc Depth (inc	() ned Leave , and 4B) (B11) vertebrate: Sulfide Oc thizospher of Reduce n Reductio Stressed lain in Rei ches): thes): thes):	es (B9) (e a (B13) lor (C1) es along d Iron (C4 on in Tilled Plants (D marks) evious ins	Living Root Di Soils (C6) 1) (LRR A) Wetla pections), it	Secor Secor D D D S S S S S S S S S S S S S	Ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatii Water N Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Wate Water Table Saturation P (includes car Describe Re-	Arbology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Aarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial In y Vegetated Concave rvations: ter Present? Ye Present? Ye pillary fringe) coorded Data (stream)	nagery (B Surface ( ss gauge, mo	d: check all that apple Water-Stai 1, 2, 4A Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or 7) Other (Exp B8) No Depth (inc No Depth (inc onitoring well, aerial p	() ned Leave , and 48) (B11) vertebrate: Sulfide Oci thizospher of Reduce n Reductik Stressed lain in Rei ches): thes): thes):	es (B9) (e s (B13) lor (C1) es along d Iron (C4 on in Tilleo Plants (D marks) evious ins	Living Root	Secor Secor D D S S S S S S S S S S S S S	Ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatii Water N Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsel Field Obser Surface Wate Water Table Saturation P (includes car Describe Re-	Arrology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Ir y Vegetated Concave rvations: ter Present? Ye Present? Ye pillary fringe) coorded Data (stream)	nagery (B Surface ( ss gauge, mo	d: check all that apple Water-Stai 1, 2, 4A Salt Crust Aquatic Im Hydrogen Oxidized R Presence of Recent Iroi Stunted or 7) Other (Exp B8) No Depth (ino No Depth (ino Depth (ino Depth (ino Depth (ino	() ned Leave , and 48) (B11) vertebrate: Sulfide Oc ihizospher of Reduce n Reductik Stressed lain in Rei ches): ches): hotos, pre	es (B9) (e s (B13) lor (C1) es along d Iron (C4 n in Tiller Plants (D marks)	Living Root J Soils (C6) J Soils (C6) 1) (LRR A) Wetla pections), it	Secor Secor D D D S S S S S S S S S S S S S	Mary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) y Present? Yes No
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HYDROLO Wetland Hy Primary Indii Surface High Wa Saturatii Water N Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Water Vater Table Saturation P (includes cap Describe Re-	In the second se	nagery (B Surface ( ss gauge, me	d: check all that apple Water-Stai 1, 2, 4A Salt Crust Aquatic Im Hydrogen Oxidized R Presence of Recent Iron Stunted or 7) Other (Exp B8) No Depth (inc No Depth (inc onitoring well, aerial p	() ned Leave , and 4B) (B11) vertebrate: Sulfide Oc (hizospher of Reduce n Reduce n Reduce (hes): (hes): (hes):	as (B9) (e: a (B13) lor (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Root J Soils (C6) 1) (LRR A) Wetla pections), it	Secor Secor D D D S S S S S S S S S S S S S	Adary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) y Present? Yes No

wet A

WETLAND DETERMINATION DA	TA FORM - Western	n Mountains, Valleys, an	d Coast Region
Project/Site:	City/County:	K, My	Sampling Date: 9-13-19 Sampling Point: DP=4
Investigator(s):	Section, Towns	hip, Range:	
Landform (hillslope, terrace, etc.):	Local relief (co	ncave, convex, none):	Slope (%):
Subregion (LRR):	Lat:	Long:	Datum:
Soil Map Unit Name:		NWI classif	ication:
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes	No (If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly disturbed?	Are "Normal Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrology r	naturally problematic?	(If needed, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing sampling p	oint locations, transect	s, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	is the Sampled Area within a Wetland?	Yes No
Remarks:			

# **VEGETATION – Use scientific names of plants.**

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1. Prince rubra	_ 60		FAL	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3.		-		Species Across All Strata: (B)
4.				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: )		= Total Co	ver	That Are OBL, FACW, or FAC: (A/B)
1				Prevalence Index worksheet:
2			******	Total % Cover of: Multiply by:
3.			and print and the second s	OBL species x 1 =
4	****		***	FACW species x 2 =
5.				FAC species x 3 =
		= Total Co	ver	FACU species x 4 =
Herb Stratum (Plot size:)	- `	•	EALL	UPL species x 5 =
1. Thomas vine repres	80		TAIN	Column Totals: (A) (B)
2				
3				Prevalence Index = B/A =
4,				Hydrophýtic Vegetation Indicators:
5				Oominance Test is >50%
6		-		Prevalence Index is ≤3.0 <sup>1</sup>
7	-	*****		Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
			****	Wetland Non-Vascular Plants
		*****	*****	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
* 3 · ••••••••••••••••••••••••••••••••••				be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: )		= Total Cov	er	
1.				Hydrophytic
2	nder sebyentidungsdiskopikaispis	<u></u>		Vegetation
		= Total Cov	er	Present? Yes No
% Bare Ground in Herb Stratum	-			
Remarks:		an tanan an		
· · · · · · · · · · · · · · · · · · ·				

#### SOIL

Profile Desc	ription: (Describe to the dep	h needed to document the indicator or confirm	the absence of indicators.)
Depth	Matrix	Redox Features	
(inches)	<u>Color (moist)</u> %	Color (moist) % Type Loc <sup>2</sup>	Texture Remarks
4	104h312		
14	10 m 2/2	Rev For Fact	
	Account for the second second	annan marta ann an ann an Ann an Ann ann an Ann	
*****	Magazartan ang ang ang ang ang ang ang ang ang a		
		anteren fran selen ander star off frank ander star and a selen a	<u></u>
	nggarifar a ginggagan yanangari yangarika di tari di nanginya 🥂 gingga menangangan 🔹		
'Type: C=Co	oncentration, D=Depletion, RM=	Reduced Matrix, CS=Covered or Coated Sand Gra	ains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applicable to all	LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Ep	ipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Hi	stic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Other (Explain in Remarks)
Hydroge	n Sulfide (A4)	Loamy Gleyed Matrix (F2)	
Depleted	Below Dark Surface (A11)	Depleted Matrix (F3)	3
Thick Da	rk Surface (A12)	Redox Dark Surface (F6)	"Indicators of hydrophytic vegetation and
Sandy M	UCKY MINERAL (S1)	Depleted Dark Sunace (F7)	wetland hydrology must be present,
Bestrictive I	eyeu Mauix (04)	Redox Depressions (Fo)	uniess disturbed of problematic.
Turne	ayer (ii present).		
Type.			
Depth (inc	nes);		Hydric Soll Present? Yes No
Remarks:			
HYDROLO Wetland Hyd	GY irology Indicators:		
Primary Indic	ators (minimum of one required	check all that apply)	Secondary Indicators (2 or more required)
Surface	Water (A1)	Water-Stained Leaves (B9) (except MLR	A Water-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ter Table (A2)	1, 2, 4A, and 4B)	4A, and 4B)
Saturatio	n (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water M	arks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)	Oxidized Rhizospheres along Living Root	ts (C3) Geomorphic Position (D2)
Algal Ma	t or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Dep	osits (B5)	Recent Iron Reduction in Tilled Soils (C6)	FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
inundatio	on Visible on Aerial Imagery (B7	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely	Vegetated Concave Surface (E	38)	
Field Observ	vations:		
Surface Wate	er Present? Yes I	lo Depth (inches):	,
Water Table	Present? Yes	lo Depth (inches):	
Saturation Pr	esent? Yes I	No Depth (inches): Wetla	nd Hydrology Present? Yes No
(Includes cap	illary tringe) wrded Data (stream dauge mo	nitoring well series photos previous inspections)	favailahla
Describe ried	wideo nara (anesin gauge, mo	moring wea, actar protos, previous inspections), i	i avaliacită:
<b>D</b>			
rtemarks:			
****	1995-1976 - No. I.		

WETLAND RATING FORM - WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats Name of wetland (if known): Holb - Wet A Date of site visit: 9-13-19
Rated by Ed Scull Trained by Ecology? Yes No Date of training
SEC: TWNSHP: RNGE: Is S/T/R in Appendix D? Yes No
Map of wetland unit: Figure Estimated size <i>CODS</i> FC

#### SUMMARY OF RATING

#### Category based on FUNCTIONS provided by wetland

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 5 **TOTAL** score for Functions 33

#### Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_\_ II\_\_\_ Does not Apply\_

Final Category (choose the "highest" category from above)



8

Summary of basic information	on about the wetland unit	
Wetland Unit has Special Characteristics	Wetland HGM Class used for Ratiog	
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	7
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	

1

Wetland Rating Form - western Washington version 2 To be used with Ecology Publication 04-06-025 August 2004



#### Does the wetland unit 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 May Need Additional Protection (in addition to the protection recommended for its category)	YES	NØ
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species ( <i>T/E</i> species)?		
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		1
SP4. Does the wetland unit 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.		

#### 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.

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Wetland name or number \_\_\_\_

#### Classification of Wetland Units in Western Washington

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8	1. M. 1.	1. A. A.	1.1.2.0	1.1		2. 1. 1.	24	3-0-6-5	101	946	1.00	200 E	196.19		1.1	100.2	10.000	2.75		1.20		104.00	100.02	187 C.	

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO - go to 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 p. ).

#### The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

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 entire wetland unit meet both of the following criteria?

- \_\_\_\_\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
  - 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 entire wetland unit 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?

NO - go to YES - The wetland class is Slope

Wetland name or number \_\_\_\_\_

5. Does the entire wetland unit meet all of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river
  - The overbank flooding occurs at least once every two years.

NOTE: The riverine unit 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 entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland.

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

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit 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 unit seems to be difficult to classify and probably contains several different HGM clases. 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. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). 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 unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM 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 if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

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S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per bood
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream 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. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut <b>rigit</b> vegetation covers > 90% of the area of the wetland points = 6	
	Dense, uncut, <b>rigid</b> vegetation > 1/2 area of wetland Dense, uncut, <b>rigid</b> vegetation > 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is points = 0	3
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. NO points = 0	z
S	Add the points in the boxes above	5
S	S 4. Does the wetland have the <u>opportunity</u> 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	(see p. 70)
	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	2
s	<b>TOTAL</b> - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	10

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H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers (see p. 80)	Figure
Choose the description that best represents condition of buffer of wetland unit. The highest scoring	
criterion that applies to the wetland is to be used in the rating. See text for definition of	
"undisturbed."	
<ul> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95%</li> </ul>	1
of circumference. No structures are within the undisturbed part of buffer. (relatively	1
undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5	
<ul> <li>— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;</li> </ul>	
50% circumference. $Points = 4$	
— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	
circumference. Points = 4	1
<ul> <li>— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 25%</li> </ul>	
circumference, . Points = 3	
- 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >	1
50% circumference. Points = 3	1
<ul> <li>If buffer does not meet any of the criteria above</li> </ul>	
- No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95%	I
circumterence. Light to moderate grazing, or lawns are OK. Points = 2	1
<ul> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference.</li> </ul>	
Light to moderate grazing, or lawns are OK. Points = 2	1
Heavy grazing in buffer. Points = 1	ł
- Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled	
helds, paving, basait bedrock extend to edge of wetland $Points = 0$ .	12
Buffer does not meet any of the criteria above. Points = 1	1
Aenal photo showing butters	
H 2.2 1 is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either ringrign or unland) that is at least 150 fl 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 ringrian corridors, heavily used gravel	1
roads, payed roads, are considered breaks in the corridor).	
$YES = 4 \text{ points} (go to H 2.3) \qquad NO = go to H 2.2.2$	
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	1
(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 $H 2.3$ ) NO = H 2.2.3	1
H 2.2.3 Is the wetland:	
within 5 mi (8km) of a brackish or salt water estuary OR	1 , ,
within 3 mi of a large field or pasture (>40 acres) OR	14
within 1 mi of a lake greater than 20 acres?	1 '
<u>I ES = 1 point</u> NO = 0 points	<u> </u>
	1.

Total for page\_

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<ul> <li>H2.3 Near or adjacent to other priority habitats listed by WDEW (see new and complete descriptions of WDFW priority habitats, and the countie in which they can be found, in the PHS report <u>http://wdfs.wa.gov/hab/bhilst.htm</u>)</li> <li>Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</li> <li>Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).</li> <li>Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species, forming a multi-layered canopy with occasional small openings; with at least 2 to especies, forming a multi-layered canopy with occasional small openings; with at least 20 trees/h. (8 trees/acre) &gt; 81 cm (32 in) dbh &gt; 200 years of age. (Mature foresits) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally tests than that found in old-growth, 80 or 200 years of age.</li> <li>Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</li> <li>Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial cossystems which mutually influence each other.</li> <li>Westside Prairies: Horaceous, non-forested plant communities that can either take the form of a dry prinie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</li> <li>Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife res</li></ul>		
<ul> <li>descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.vag.ov/habi/belists.htm.)</li> <li>Which of the following priority habitats are within 330fl (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>Aspen Stands: Pure or mixed stands of aspeg greater than 0.4 ha (1 acre).</li> <li>Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).</li> <li>Herfaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</li> <li>Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small opening; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 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 quantify of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</li> <li>Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 161).</li> <li>Haparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and ternestrial ecosystems which mutually influence each other.</li> <li>Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).</li> <li>Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</li> <li>Nearshore: Relatively undisturbed nea</li></ul>	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete	
<ul> <li>the PHS report http://wdf.wa.gov/hak/phslist.htm)</li> <li>Which of the following priority habitas are within 330f (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed.</li> <li>Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</li> <li>Biodiversity Areas and Corritors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).</li> <li>Hertaceous Balds: Variable size pathes of grass and forbs on shallow soils over bedrock.</li> <li>Old-growth/Mature 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. If (8 trees/acre) &gt; 81 cm (32 in) dhon &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; 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 of age. (Mature forests) Stands with average of the cak component is important (<i>full descriptions in WDFW PHS report p. 153</i>).</li> <li>Ripartiam: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</li> <li>Westside Prairies: Herbaecous, non-forested plant communities that can either take the form of a dry parine (<i>full descriptions in WDFW PHS PHP PHP 161</i>).</li> <li>Instream: The creas adjacent to aquatic systems which mutually influence each other.</li> <li>Westside Prairies: Herbaecous, non-forested plant communities that can either take the form of a dry parine (<i>full descriptions in WDFW PHS Prept p. 161</i>).</li> <li>Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requir</li></ul>	descriptions of WDFW priority habitats, and the counties in which they can be found, in	
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<ul> <li>Index Housdows and as on a basis of head in the origing in a ready one of the second processing of the secon</li></ul>	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft)	
tailings. May be associated with cliffs.         Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.         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         Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	corrinosed of basalt andesite and/or sedimentary rock, including ripran slides and mine	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. 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 Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	tailings. May be associated with cliffs.	
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.         If wetland has 3 or more priority habitats = 4 points         If wetland has 2 priority habitats = 3 points         If wetland has 1 priority habitats = 1 point         Note: All vegetated wetlands are by definition a priority habitat but are not included in this         Iist. Nearby wetlands are addressed in question H 2.4)	Snags and Logs: Trees are considered snags if they are dead or dving and exhibit sufficient	
diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. 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 Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a	
height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. 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 Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	diameter at breast height of $> 51$ cm (20 in) in western Washington and are $> 2$ m (6.5 ft) in	
long. 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 Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft)	
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 Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	long.	
If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	If wetland has 3 or more priority habitats = 4 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	If wetland has 2 priority habitats = 3 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	If wetland has 1 priority habitat = 1 point No habitats = 0 points	
list. Nearby wetlands are addressed in question H 2.4)	Note: All vegetated wetlands are by definition a priority habitat but are not included in this	3
	list. Nearby wetlands are addressed in question H 2.4)	<u> </u>

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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	
boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.	
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	
The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake fringe wetland within ½ mile points = 3	
There is at least 1 wetland within ½ mile. points = 2	_
There are no wetlands within ½ mile. points = 0	3
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	12
TOTAL for H l from page 14	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	15

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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 Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.	Category
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> <li>With a selinity greater than 0.5 ppt</li> </ul>	
YES = Go to SC 1.1 NO	
SC 1.1 Is the wetland unit 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?	Cat. I
YES = Category I NO go to SC 1.2	
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II	Cat. I
— 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 Spectra cover are the only species that cover	Cat. II
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	Dual rating
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.	I/II
<ul> <li>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.</li> </ul>	
<ul> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	

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<ul> <li>SC 2.0 Natural Heritage Wetlands (see p. 87)</li> <li>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.</li> <li>SC 2.1 Is the wetland unit 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)</li> <li>S/T/R information from Appendix D or accessed from WNHP/DNR web site</li> </ul>	Cat. I
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 NO not a Heritage Wetland	
<ul> <li>SC 3.0 Bogs (see p. 87)</li> <li>Does the wetland unit (or any part of the unit) 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.</li> <li>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either</li> </ul>	
<ul> <li>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</li> <li>2. Does the unit have organic soils, either peats or mucks that are less than 16</li> </ul>	
<ul> <li>volcanic ash, or that are floating or a lake or pond?</li> <li>Yes - go to Q. 3</li> <li>No - Is not a bog for purpose of rating</li> <li>3. Does the unit have more than 70% cover of mosses at ground level, AND</li> </ul>	
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.	
1. Is the unit 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)?	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I



<ul> <li>SC 4.0 Forested Wetlands (see p. 90)</li> <li>Does the wetland unit have at least 1 acre of forest that meet 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.</li> <li>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.</li> </ul>	-
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.	
<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> </ul>	Cat. I
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
<ul> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>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</li> <li>The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> <li>YES = Go to SC 5.1 NO not a wetland in a coastal lagoon</li> </ul>	
<ul> <li>SC 5.1 Does the wetland meets all of the following three conditions?</li> <li>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).</li> </ul>	
At reast 74 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.	Cat. J
— The wetland is larger than 1/10 acre (4350 square feet)	
YES = Category I NO = Category II	Cat. II

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SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NOnot an interdunal wetland for rating	
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 SR 103</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 once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cet II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cut. II
YES = Category III	Cat. III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if welland falls into several categories, and record on	NA
p.L	1015
If you answered NO for all types enter "Not Applicable" on p.1	

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Patterson Creek #11"	
Wetland name or number OFF-site to east	Wetland
WETLAND RATING FORM – WESTERN WASHINGTON Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats	Does
Name of wetland (if known):	C SP1. Ho Threate
Map of wetland unit: Figure Estimated size KC /wranton SUMMARY OF RATING	For the appropr SP2. Ha Threater For the
Category based on FUNCTIONS provided by wetland IIIIV	sP3, D WDFW
Category I = Score >=70Score for Water Quality FunctionsCategory II = Score 51-69Score for Hydrologic FunctionsCategory III = Score 30-50Score for Habitat FunctionsCategory IV = Score < 30	SP4. D. For Pro hav
Category based on SPECIAL CHARACTERISTICS of wetland I II Does not Apply	
Final Category (choose the "highest" category from above)	The hy simplif Class o
Summary of basic information about the wetland unit	on clas

Characteristics used for Rating Estuarine Depressional Natural Heritage Wetland Riverine Bog Lake-fringe **Mature Forest** Slope **Old Growth Forest** Flats Coastal Lagoon Freshwater Tidal Interdunal None of the above Check if unit has multiple HGM classes present

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#### Does the wetland unit 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 May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?		
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		
SP4. Does the wetland unit 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.		/

#### <u>To complete the next part of the data sheet you will need to determine the</u> <u>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.

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#### **Classification of Wetland Units in Western Washington**

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit 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 p. ).

#### 2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit. 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 entire wetland unit meet both of the following criteria?

\_\_\_\_The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

- -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)

Does the entire wetland unit 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  $\leq$ ift diameter and less than 1 foot deep).

YES - The wetland class is Slope

NO - 20 10 5

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5. Does the entire wetland unit meet all of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

The overbank flooding occurs at least once every two years.

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

NO - go to YES - The wetland class is Riverine

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

YES - The wetland class is Depressional NO - go to 7

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. 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. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). 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 unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM 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 if you have more than 2 HGM classes within a wetland boundary, classify the wetland as Depressional for the rating.

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YES - The wetland class is Depressional NO - go to 8

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to unionyce water gnality	Points (only 1 score per benc)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p. 38)	
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure	
	Unit is a depression with no surface water leaving it (no outlet) points = 3		
שו	Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2		
	Unit is a "flat" depression (0. 7 on key), or in the Flats class, with permanent surface outflow and		
	no obvious natural outlet and/or outlet is a man-made ditch points = 1	2	
1	(If ditch is not permanently flowing treat unit as "intermittently flowing")		
	Provide photo or drawing		
	S 1.2 The soil 2 incres below the surface (or duil layer) is clay or organic (use NRCS		
D	YES (hounts = 4)	, ,	
	NO points = 0	9	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)	Figure	
	Wetland has persistent, ungrazed, vegetation $> = 95\%$ of area <u>points = 5</u>	]	
ען	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		
	D1 4 Characteristics of seasonal ponding or injundation	Figure	
	This is the area of the wetland unit that is ponded for at least 2 months, but dries out		
D	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		
	Area seasonally ponded is $> \frac{1}{4}$ total area of wetland points = 2	, , , , , , , , , , , , , , , , , , ,	
	Area seasonally ponded is $< \frac{1}{4}$ total area of wetland points = 0	17	
	Map of Hydroperiods		
D	I of all for D 1         Add the points in the boxes above	<u>/3</u>	
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?	(see p. 44)	
	Answer YES if you know or believe there are pollutants in groundwater or surface water		
	coming into the wetland that would otherwise reduce water quality in streams, takes or groundwater downgradient from the wetland. Note which of the following conditions		
	ground water downgradient from the wetland. Note which of the following conditions		
	sources, but any single source would qualify as opportunity		
	- 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,		
	Residential unhan areas golf courses are within 150 ft of wetland		
	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	71	
	Add score to table on p. 1	44	

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D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only Latore per body	
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		
D	D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) Unit has an intermittently flowing, OR highly constricted permanently flowing outlet Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch (If ditch is not permanently flowing treat unit as "intermittently flowing")		
D	D 3.2 Depth of storage during wet periods Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft or more above the surface or bottom of outlet The wetland is a "headwater" wetland" Marks of ponding between 2 ft to $\leq 3$ ft from surface or bottom of outlet points = 5 points = 5		
	Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	5	
D	D 3.3 Contribution of wetland unit 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 unit itself. The area of the basin is 10s to 100 times the area of unit The area of the basin is more than 100 times the area of the unit Entire unit is in the FLATS class D 3.3 Contributing surface water to the wetland to the area of the basin is 10 to 100 times the area of the unit Entire unit is in the FLATS class D 3.3 Contributing surface water to the wetland to the area of the basin is more than 100 times the area of the unit Entire unit is in the FLATS class	Μ	
D	Total for D 3Add the points in the boxes above	70	
D	<ul> <li>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit 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 in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply.</li> <li>— Wetland is in a headwater of a river or stream that has flooding problems</li> <li>— Wetland drains to a river or stream that has flooding problems</li> </ul>		
	<ul> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>		
	YES multiplier is 2 NO multiplier is 1		
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	20	

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#### Total for page \_\_\_\_\_

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Comments

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H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers (see p. 80)	Figure
Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."	
<ul> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% circumference. Points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% points = 3</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;25% points = 3</li> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt;95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</li> </ul>	
Light to moderate grazing, or lawns are OK. Points = 2 Users empire is by $\delta_{\rm empire}$	
<ul> <li>reary grazing in burgin.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland</li> <li>Buffer does not meet any of the criteria above.</li> <li>Points = 1</li> </ul>	3
Aerial photo showing buffers	
H 2.2 <u>Corridors and Connections</u> (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 points (noto H 2.3) 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 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) NO = H 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?	4
YES = 1 point NO = 0 points	
Total for	page_7

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Wetland name or number

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in	
the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u> )	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	ł
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various	
species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).	l i
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	i i
Old-growth/Mature 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	l .
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%;	i i
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	i i
west of the Cascade crest.	i i
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	i i
canopy coverage of the oak component is important (full descriptions in WDFW PHS	
report p. 158).	
Chiparian: The area adjacent to aquatic systems with flowing water that contains elements of	t
both aquatic and terrestrial ecosystems which mutually influence each other.	l i
Westside Prairies: Herbaceous, non-lorested plant communities that can either take the	Í .
form of a dry prairie or a wet prairie ( <i>full descriptions in WDFW PHS report p. 101</i> ).	
Instream: The combination of physical, biological, and chemical processes and conditions	
that interact to provide functional life history requirements for instream lish and whome	
resources. Name and Delation to an distant and a constant with the Theory include Constal Monthern	Í.
Nearshore: Relatively undisturbed hearshore haddats. These include Coastal Nearshore,	
definition of relatively undisturbed are in WDEW report np. 167, 160 and elegrant in	
definition of relatively undisturbed are in with w report: pp. 10/-109 and glossary in	
Appendix A). Cover: A naturally occurring covity recess void or system of interconnected passages under	
the earth in soils rock ice or other geological formations and is large enough to contain a	ĺ
human	İ
Cliffe: Greater than 7.6 m (25 ft) high and occurring below 5000 ft	
Tabe: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft)	
composed of baselt andesite and/or sedimentary rock including rinran slides and mine	
ailings May be associated with cliffs	
Snags and Logs: Trees are considered snags if they are dead or dving and exhibit sufficient	1
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a	i i
diameter at breast height of $> 51$ cm (20 in) in western Washington and are $> 2$ m (6.5 ft) in	1
height Priority logs are $> 30$ cm (12 in) in diameter at the largest end, and $> 6$ m (20 ft)	ĺ
long.	1
If we than that 3 or more priority habitats = 4 points	i i
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	1 4
Note: All vegetated wetlands are by definition a priority habitat but are not included in this	/
list. Nearby wetlands are addressed in auestion H 2.4)	l '
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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.         The wetland is Lake-fringe on a lake with little disturbance and there are 3 other take-fringe wetlands within ½ mile, BUT the connections between them are disturbed         The wetland is Lake-fringe on a lake with disturbance and there are 3 other take-fringe wetland within ½ mile, BUT the connections between them are disturbed         The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile, BUT the connections between them are disturbed         The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile.         points = 3         There is at least 1 wetland within ½ mile.       points = 2         There are no wetlands within ½ mile.       points = 0	ح
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	
TOTAL for H l from page 14	17
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	31

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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 Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.	Category
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> <li>With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO</li></ul>	
SC 1.1 Is the wetland unit 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	Cat. I
<ul> <li>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</li> <li>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.</li> <li>At least <sup>3</sup>⁄<sub>4</sub> of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	

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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 unit 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	Cat. I
or as a site with state threatened or endangered plant species? YES = Category I NO not a Heritage Wetland	
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) 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 unit 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 unit 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?	
<ol> <li>No - Is not a bog for purpose of rating</li> <li>No - Is not a bog for purpose of rating</li> <li>Does the unit-flave 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)?</li> </ol>	
Yes – Is a bog for purpose of rating No - go to Q: 4 NOTE: If you are uncertain about the extent of messes 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.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I NoIs not a bog for purpose of rating	Cat. I

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<ul> <li>SC 4.0 Forested Wetlands (see p. 90)</li> <li>Does the wetland unit have at least 1 acre of forest that meet 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.</li> <li>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.</li> </ul>	
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.	
<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>YES = Category I NO not a forested wetland with special characteristics</li> </ul>	Cat. I
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
<ul> <li>So to wettain the Coastal Lagoons (see p. 91)</li> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? <ul> <li>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</li> <li>The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>meeds to be measured near the bottom</i>)</li> <li>YES = Go to SC 5.1</li> </ul> </li> </ul>	
<ul> <li>SC 5.1 Does the wetland meets all of the following three conditions?</li> <li>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).</li> </ul>	
At least <sup>3</sup> /4 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	Cat. II

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SC 6.0 Interdunal Wetlands (see p. 93)			
Is the wetland unit 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 w	etland for rating		
If you answer yes you will still need to rate the wetland be	ised on its		
functions.			
In practical terms that means the following geographic areas: • Long Beach Peninsula- lands west of SR 103			
<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 w	etlands that is		
once acre or larger?			
YES = Category II NO – go to SC	6.2 Cet II		
SC 6.2 Is the unit 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	Cat. III		
Category of wetland based on Special Characteristics	and the second second		
Choose the "highest" rating if wetland falls into several categories	and record on $\mathcal{N}$		
p.l.			
If you answered NO for all types enter "Not Applicable" on p.1			

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