Wetland and Stream Delineation Report



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Port Gamble Redevelopment Plan Kitsap County, Washington

for

Pope Resources

January 8, 2013



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INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) was contracted by Pope Resources (Pope) to conduct a critical areas assessment at the Port Gamble property in Kitsap County, Washington. Pope is intending a planned development of the Port Gamble town site. The objective of this wetland and stream delineation report is to provide critical area baseline information on lands within the town site, as depicted on Figure 1 - Vicinity Map. GeoEngineers has prepared this Critical Areas Assessment Report in accordance with Kitsap County Code (KCC) Title 19 (Critical Areas Ordinance).

GeoEngineers has been working with Pope on this project since 2005 and numerous site visits have been completed in support of identifying baseline conditions within the project area. GeoEngineers has delineated wetlands and streams on the project site during multiple site visits completed over a period of seven years. Because one final and complete critical areas report is needed for the project, GeoEngineers was tasked with revisiting the site (November, 2012) and verifying previously delineated wetland boundaries as well as delineating newly identified wetland and stream features.

After project designs are finalized, potential wetland and buffer impacts should be assessed and, if needed, minimization and mitigation options should be evaluated. If it is determined by Kitsap County through the SEPA Environmental Impact Statement (EIS) scoping process that there is the potential for wetland and/or stream impacts, an impact and mitigation report will be completed as part of the EIS process.

PROJECT LOCATION AND SITE DESCRIPTION

The more than 320-acre assessment area of Port Gamble is located in the north end of Kitsap County within and adjacent to the town of Port Gamble, Washington. It is located in Sections 5, 6, 7 and 8 of Township 27 North and Range 02 East of the Willamette Meridian and within Water Resources Inventory Area (WRIA) 15 (Kitsap). The site extends from the shorelines of Port Gamble and Hood Canal westward to dense, relatively undisturbed forested habitat. Currently, the site contains a variety of land uses that include:

- Industrial uses located along Port Gamble and Hood Canal shorelines.
- Residential homes located in the north portion.
- Business district located in the northeast area.
- Model airplane field and trail head located in the southeast corner.
- Hood Canal Nursery located along the western portion.
- Agricultural fields used for grazing located in the southwest portion.
- Trails located throughout the property that varies in form from older maintenance and logging roads to trails cut into the brush.
- Electrical transmission line corridor that cuts east/west through the project area.
- Undeveloped forested habitat located in the central to south area.



PROJECT DESCRIPTION

Pope is intending a planned development of the Port Gamble town site. This report is being used to support application for a Performance Based Development (PBD) and Preliminary Plat application. This planned development will include a variety of land uses. More information can be found in the project narrative for the PBD, but these proposed land include:

- Water access and associated water activities.
- Residential homes: the homes will be single-family homes, multi-family homes (i.e. condos and apartments) on a variety of lot sizes (above and below one acre in size).
- Commercial areas: these areas will include shops/retail, restaurants, lodging, etc.
- Associated development (i.e. roads and utilities).
- Open Space areas: trails, parks and areas that will remain in natural condition.
- Moderate Intensity Agriculture: Hops and vineyards, and a greenhouse and nursery.

These current plans depict potential impacts to wetland and stream habitats. However, the assessment of impacts and the proposed mitigation plan will be completed in a separate report as part of the EIS process.

WETLAND AND STREAM DELINEATION

Paper Inventory

Environmental maps of the project area were collected and reviewed as part of a paper inventory. The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online mapper (USFWS, 2012) shows multiple wetland areas within the project boundary. Two scrub/shrub palustrine wetlands and two unconsolidated bottom ponds are mapped in the southeast project area. The north (Hood Canal) and the east (Port Gamble) shorelines are mapped as Estuarine Intertidal Unconsolidated Shores. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey indicates the following soil types within the project area (USDA-NRCS, 2012a):

- Dystric Xerothents, 45 to 70 percent slopes;
- Kapowsin gravelly loam, 0 to 6 percent slopes;
- Kapowsin gravelly loam, 6 to 15 percent slopes;
- Kitsap silt loam, 8 to 15 percent slopes; hydric inclusions;
- McKenna gravelly loam;
- Poulsbo gravelly sandy loam, 0 to 6 percent slopes;
- Poulsbo gravelly sandy loam, 6 to 15 percent slopes:
- Poulsbo gravelly sandy loam, 15 to 30 percent slopes; and
- Poulsbo-Ragnar complex, 0 to 6 percent slopes.

Dystic xerothents are not hydric and do not contain hydric inclusions. All the Kapowsin gravelly loam soils, all the Poulsbo gravelly sandy loam soils, Poulsbo-Ragnar Complex soils and Kitsap silt loam soils are not hydric but do contain hydric inclusions (USDA-NRCS, 2012c). McKenna gravelly loam soils are hydric (USDA-NRCS, 2012c). Figure 2 depicts mapped NWI wetlands and mapped soils.

Additional information was obtained from the Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) and Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (DNR, 2007; WDFW, 2012). Machias Creek is mapped by both DNR and WDFW as flowing north and passing under State Route 104. DNR maps this stream as Unknown and according to SalmonScape the stream contains Coho (*Oncorhynchus kisutch*). No other streams were mapped within the project area.

Field Investigation

GeoEngineers biologists conducted a field investigation over five days (November 13 through 16 and November 19, 2012) to characterize the Port Gamble shoreline, delineate newly identified wetland and stream features, verify previously delineated wetland and stream boundaries and characterize fish and wildlife habitat on the subject property. A total of 17 wetlands and five streams were identified and delineated. Appendix B contains the survey from Triad with the wetland locations.

Fish and Wildlife Habitat

WDFW lists state threatened and endangered (T&E) species, and the Priority Habitat Species (PHS) data map locations of these species and priority habitats. According to the WDFW PHS web mapper, there are no T&E species located on the area assessed for this project (WDFW, 2012). Priority habitats within the project area consist of bald eagle (*Haliaeetus leucocephalus*) management zones, wetland habitat and streams. Pacific sand lance (*Ammodytes hexapterus*), surf smelt (*Hypomesus pretiosus*) and pacific herring (*Clupea pallasi*) have breeding areas mapped along the shoreline of Port Gamble and Hood Canal.

The United States Fish and Wildlife Service (USFWS) lists threatened and endangered species and designated critical habitats by county. The USFWS shows two-listed T&E animal species, no T&E plant species and no designated critical habitats that occur in Kitsap County (USFWS, 2012). The two listed animal species are bull trout (Salvelinus confluentus) and marbled murrelet (Brachyramphus marmoratus) and are only found in marine waters within Kitsap County (USFWS, 2012). The National Marine Fisheries Service (NMFS) lists west coast fish species that are T&E (NMFS, 2011). Species from both the NMFS and USFWS lists are likely found in the adjacent marine waters of the project area but are not found within the project area.

The occurrence of the listed terrestrial mammals and birds at the property is unlikely due to an absence of documented T&E species at the project site. Listed species were not observed and there was no evidence of these species being present in this area. Marbled murrelet critical habitat is associated with old growth forests, which do not occur on or in the vicinity of the project corridor. As such, they are not expected to occur at the site (GeoEngineers, 2011).



DNR lists known occurrences of rare plants by county. A search of the DNR Natural Heritage Program database revealed no records of any listed plants, high quality ecosystems or other significant natural features within the vicinity of the project (DNR, 2011).

As stated earlier, a total of 17 wetlands and five streams were identified within and adjacent to the project area. These aquatic critical areas provide a variety of habitats that are important for wildlife within urban areas. Machias Creek is the only stream within the project area that is mapped as containing and providing habitat for salmonid fish species.

Wildlife habitat associated with the project consists of forested habitat. The forested habitat is dominated by Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), big leaf maple (*Acer macrophyllum*) and red alder (*Alnus rubra*) with an understory that consists of salmonberry (*Rubus spectabilis*), Indian plum (*Oemleria cerasiformis*), red elderberry (*Sambucus racemosa*) and sword fern (*Polystichum munitum*). During the field investigations, we did not observe evidence that priority wildlife species are utilizing the project area. This area is expected to experience use by resident and migratory birds as well as amphibians and reptiles and may also provide habitat for small- and medium-sized mammals such as mice, raccoon, bear and deer.

Wetland, Stream and Shoreline Features

Delineation of aquatic critical areas (wetlands and streams) was conducted in accordance with guidelines presented in KCC Chapter 19 (Critical Areas Ordinance), which includes the use of Washington State Wetlands Identification and Delineation Manual (Ecology, 1997). In addition, the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE, 2010) were used. The Ordinary High Water Mark (OHWM) of streams was evaluated and delineated by examining breaks in the topography, drift lines, shifts in vegetation and signs of water marks, according to USACE protocol as referenced from Regulatory Guidance Letter (No. 05-05), Ordinary High Water Mark Identification, December 7, 2005. The Washington Administrative Code (WAC) was also referenced for the definition of OHWM (WAC 173-22-030 § 11).

GeoEngineers identified and delineated a total of 17 wetlands and five streams. We did not observe unmapped off-site features that would be impacted during development. GeoEngineers placed survey flags marking wetland and stream jurisdictional boundaries. These boundaries were surveyed by Triad Associates and the survey map is included in Appendix B. To make wetland determinations, we established formal data sample plots. We also rated each delineated wetland using the Washington State Wetland Rating System for Western Washington (Hruby, 2008) as specified in KCC Chapter 19.200.210 (Wetland identification and functional rating). Appendices C and D include sample plot data forms and wetland rating forms, respectively. Stream typing was conducted in accordance with guidelines presented in KCC Chapter 19.300.310 (Fish and Wildlife habitat conservation area categories). Determination of buffer width for streams was conducted in accordance with KCC Chapter 19.300.315 (Development standards).

Tables 1 through 23 below summarizes information regarding the wetland, stream and shoreline critical area features identified during the field investigation.

TABLE 1. WETLAND A

Wetland A - Information		
Location	South of Future Bypass Easement and west of State Route 104	
WRIA	15 - Kitsap	
Local Jurisdiction	Kitsap County	
Rating	II (53 points) ¹	
Buffer Width	150 Feet ²	
Size	Approximately 5.45 acres (estimated from site visit)	
Cowardin Class	Palustrine Scrub/Shrub, Emergent and Aquatic Bed	
HGM Class	Depressional	



Description Summary	
Sample Plot	SP-1 and SP-3
Vegetation	Aquatic Bed: Common duckweed (Lemna minor) Herbaceous: Broadleaf cattail (Typha latifolia), reed canarygrass (Phalarus arundinacea), common rush (Juncus effusus), creeping buttercup (Ranunculus repens), panicle bulrush (Scirpus microcarpus), and field horsetail (Equisetum arvense). Shrub: Nootka rose (Rosa nutkana), salmonberry (Rubus spectabilis) and Himalayan blackberry (Rubus armeniacus).
Soils	N/A - hydric soils assumed because area is permanently ponded
Hydrology	<u>Indicators:</u> water ponded at 2 to 3 feet<u>Source:</u> direct precipitation, surface runoff, high groundwater table.
Notes	Depressional system that is influenced by beaver activity. Water flows over the trail and into Wetland B.
Western Washington W	/etland Rating Functions Summary (53 points total)
Water Quality	18 points: due to vegetation coverage, having a constricted outlet and untreated stormwater discharges (i.e. source of pollution).
Hydrologic	12 points: due to having a constricted outlet and vegetation coverage; however there are no streams within 300 feet and it does not provide opportunity for hydrologic functions.
Habitat	23 points: due to having multiple vegetation classes, moderate amount of habitat interspersion with special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.
Buffer Condition	A trail is located along a portion of the western buffer and separates Wetland A from Wetland B. The wetland is immediately surrounded by forested habitat that is dominated by Douglas fir (<i>Pseudotsuga menziesii</i>), western red cedar (<i>Thuja plicata</i>), big leaf maple (<i>Acer macrophyllum</i>) and red alder (<i>Alnus rubra</i>) with an understory that consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>), red elderberry (<i>Sambucus racemosa</i>) and sword fern (<i>Polystichum munitum</i>). SP – 3 was completed near Wetland B but depicts upland conditions adjacent to Wetland A.

- 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
- 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 2. WETLAND B

Wetland B - Information South of Future Bypass Easement, west of Wetland A and Location west of the model airplane field WRIA 15 - Kitsap Local Kitsap County Jurisdiction Rating II (61 points)1 150 Feet² **Buffer Width** More than 13 acres (estimated Size from site visit) Cowardin Palustrine Forested, Emergent Class and Aquatic Bed **HGM Class** Depressional



Description Summary		
Sample Plot	SP-2 through SP-6.	
Vegetation	Aquatic Bed: Common duckweed (Lemna minor) Herbaceous: Broadleaf cattail (Typha latifolia), lady fern (Athyrium filix-femina), common rush (Juncus effusus), Skunk cabbage (Lysichiton americanus), creeping buttercup (Ranunculus repens), and field horsetail (Equisetum arvense). Shrub: Red alder (Alnus rubra), Nootka rose (Rosa nutkana), and salmonberry (Rubus spectabilis) Tree: Western red cedar (Thuja plicata), red alder (Alnus rubra), western hemlock (Tsuga heterophylla) and sitka spruce (Picea sitchensis).	
Soils	Meets criteria for hydric soil indicator Hydrogen Sulfide (A4), Depleted Matrix (F3) and Redox Dark Surface (F6).	
Hydrology	<u>Indicators:</u> saturated to the surface, areas with standing water, high water table.<u>Source:</u> direct precipitation, surface runoff, high groundwater table, reservoir.	
Notes	Depressional system that is influenced by beaver activity. Water flows over a trail from Wetland A and into Wetland B, and water from Wetland B flows over a different trail and into Wetland C. Wetland B extends offsite and was not fully delineated.	
Western Washington V	Vetland Rating Functions Summary (61 points total)	
Water Quality	18 points: due to vegetation coverage, having a constricted outlet and untreated stormwater discharges (i.e. source of pollution).	
Hydrologic	12 points: due to having a constricted outlet and vegetation coverage; however it outlets to a stream that is in the bottom of a ravine and therefore does not provide opportunity for hydrologic functions.	
Habitat	31 points: due to having multiple vegetation classes, high amount of habitat interspersion with special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.	
Buffer Condition	The forested buffer is dominated by Douglas fir (<i>Pseudotsuga menziesii</i>), western red cedar (<i>Thuja plicata</i>), big leaf maple (<i>Acer macrophyllum</i>) and red alder (<i>Alnus rubra</i>) with an understory that consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>), red elderberry (<i>Sambucus racemosa</i>) and sword fern (<i>Polystichum munitum</i>).	

Notes:

1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

SP-3 and SP-4 depict typical upland conditions adjacent to the wetland.

2. Kitsap County Code (KCC) 19.200.220 – Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 3.	WETLAND C					
Wetland C - Information						
Location	North of Wetland B					
WRIA	15 - Kitsap					
Local Jurisdiction	Kitsap County	′				
Rating	III (39 points)	1	AN ASS		4 1	
Buffer Width	150 Feet ²					11/1/2
Size	Approximately 0.35 acre (estimated from site visit)		XXX			
Cowardin Class	Palustrine Forested					
HGM Class	Depressional					
Description Sur	nmary					
Sample Plot	SP-7 a	ind SP-8.				
Vegetation Herbaceous: Skunk cabba creeping buttercup (Ranunca Shrub: Salmonberry (Rubus Tree: Western red cedar (Tsuga heterophylla).		culus repens), and s spectabilis).	field horsetail (L	Equisetum ar	vense).	
Soils	Meets criteria for hydric soil		l indicator Hydroge	n Sulfide (A4)		
Hydrology	<u>Indicators:</u> saturated to the <u>Source:</u> direct precipitation,		•	J		r table.
Notes	Depressional system that Machias Creek. Water from					is headwaters to



Vegetation	<u>Shrub:</u> Salmonberry (<i>Rubus spectabilis</i>). <u>Tree:</u> Western red cedar (<i>Thuja plicata</i>), red alder (<i>Alnus rubra</i>), and western hemlock (<i>Tsuga heterophylla</i>).
Soils	Meets criteria for hydric soil indicator Hydrogen Sulfide (A4)
Hydrology	<u>Indicators:</u> saturated to the surface, areas with standing water, high water table.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.
Notes	Depressional system that is influenced by beaver activity. Wetland is headwaters to Machias Creek. Water from Wetland B flows over the trail into Wetland C.
Western Washington W	Vetland Rating Functions Summary (39 points total)
Water Quality	$\underline{6 \; points:}$ due to vegetation coverage, having an un-constricted outlet and having no sources of pollution within 150 feet of the wetland.
Hydrologic	8 points: due to having an un-constricted outlet and vegetation coverage; however it outlets to a stream that flows in the bottom of a ravine and therefore does not provide opportunity for hydrologic functions.
Habitat	25 points : due to having one vegetation class (forested) with special habitat features and no habitat interspersion. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.
Buffer Condition	The wetland is bordered to the north, east and west by forested habitat and to the south by a walking trail and Wetland B. The forested buffer is dominated by Douglas fir (<i>Pseudotsuga menziesii</i>), western red cedar (<i>Thuja plicata</i>), big leaf maple (<i>Acer macrophyllum</i>) and red alder (<i>Alnus rubra</i>) with an understory that consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>), red elderberry (<i>Sambucus racemosa</i>) and sword fern (<i>Polystichum munitum</i>). SP-7 depicts typical upland conditions adjacent to Wetland C.

- Notes:
 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
 - 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 4. WETLAND D

TABLE 4. WEILAND D			
Wetland D – Information			
Location		n of Wetland E, in an ultural field	4
WRIA	15 -	Kitsap	N.
Local Jurisdiction	Kitsa	p County	
Rating	IV (26	6 points) ¹	
Buffer Width	40 Fe	pet ²	
Size		eximately 1.10 acres mated from site visit)	
Cowardin Class	Palus	strine Forested and Emergent	
HGM Class	Slope		//K
Description Sur	nmary		
Sample Plot		SP-9 and SP-10.	
(Poa pratensis), common rush (Juncus effusus), creeping buttercup (Ranunculus in Skunk cabbage (Lysichiton americanus), lady fern (Athyrium filix-femina), and field he (Equisetum arvense) and grazed grasses. Shrub: Salmonberry (Rubus spectabilis) and red alder (Alnus rubra)		(Poa pratensis), common rush (Juncus effusus), creeping buttercup (Ranunculus repensional Skunk cabbage (Lysichiton americanus), lady fern (Athyrium filix-femina), and field horsets (Equisetum arvense) and grazed grasses.	s),
Soils		Meets criteria for hydric soil indicator Hydrogen Sulfide (A4)	
Hydrology	Indicators: saturated to the surface with water at the surface.Source: direct precipitation, surface runoff, high groundwater table.		
Notes	Sloping system located within a grazed pasture that extends slightly into the surroundin forest.		ng
Western Washi	ngton V	Vetland Rating Functions Summary (26 points total)	
Water Quality	ty 4 points: due to vegetation coverage, and being within a grazed pasture (i.e. source of pollution).		of
Hydrologic	Hydrologic 300 feet and it does not provide opportunity for hydrologic functions.		in
Habitat	Habitat due to having two vegetation classes, low amount of habitat interspersic some special habitat features. The system has undisturbed connections to other uplat wetland areas.		
Buffer Condition South by forested habitat. The forested buffer is dominated by Douglas fir (Pseu menziesii), western red cedar (Thuja plicata), big leaf maple (Acer macrophyllum) alder (Alnus rubra) with an understory that consists of salmonberry (Rubus spe		The wetland is bordered to the north, east and west by fences and grazed pasture and to the south by forested habitat. The forested buffer is dominated by Douglas fir (<i>Pseudotsugmenziesii</i>), western red cedar (<i>Thuja plicata</i>), big leaf maple (<i>Acer macrophyllum</i>) and realized (<i>Alnus rubra</i>) with an understory that consists of salmonberry (<i>Rubus spectablis</i>) and the leaf of the same o	ga ed

Notes:

1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

Indian plum (Oemleria cerasiformis), red elderberry (Sambucus racemosa) and sword fern

(Polystichum munitum). SP-10 depicts typical upland conditions within the pasture.

2. Kitsap County Code (KCC) 19.200.220 – Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 5. WETLAND E

Wetland E - Information		
Location	South of the existing nursery in the agricultural field and extends into the forested area	
WRIA	15 - Kitsap	
Local Jurisdiction	Kitsap County	
Rating	III (43 points)1	
Buffer Width	150 Feet ²	
Size	Approximately 2.75 acres (estimated from site visit)	
Cowardin Class	Palustrine Forested and Emergent	
HGM Class	Slope	



HGM Class	Slope	
Description Sur	nmary	
Sample Plot		SP-11 and SP-12.
Vegetation		<u>Herbaceous:</u> Reed canarygrass (<i>Phalarus arundinacea</i>), colonial bentgrass (<i>Agrostis capillaris</i>), Kentucky bluegrass (<i>Poa Pratensis</i>), common rush (<i>Juncus effusus</i>), creeping buttercup (<i>Ranunculus repens</i>), lady fern (<i>Athyrium filix-femina</i>), grazed grasses and field horsetail (<i>Equisetum arvense</i>).
		<u>Shrub:</u> Salmonberry (<i>Rubus spectabilis</i>) and Himalayan blackberry (<i>Rubus armeniacus</i>) <u>Tree:</u> Western red cedar (<i>Thuja plicata</i>), red alder (<i>Alnus rubra</i>).
Soils		Meets criteria for hydric soil indicator Redox Dark Surface (F6)
Hydrology		<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.
Notes Sloping system located within a grazed pasture that extends slightly into the surrou forest. The wetland discharges into Stream 4.		Sloping system located within a grazed pasture that extends slightly into the surrounding forest. The wetland discharges into Stream 4.
Western Washi	ngton W	/etland Rating Functions Summary (43 points total)
Water Quality		12 points: due to vegetation coverage, and being within a grazed pasture (i.e. source of pollution).
Hydrologic		$\underline{5}$ points: due to vegetation coverage and structure; however it does not provide opportunity for hydrologic functions.
Habitat		<u>26 points:</u> due to having two vegetation classes, low amount of habitat interspersion with some special habitat features. The system has undisturbed connections to other upland and wetland areas.
Buffer Condition	n	The wetland is bordered to the south by grazed pasture, to the west by fences and the dirt access road, to the north by fences and the nursery and to the east by forested habitat. The forested buffer is dominated by Douglas fir (Pseudotsuga menziesii), western red cedar (Thuja plicata), big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) with an understory that consists of salmonberry (Rubus spectabilis), Indian plum (Oemleria

Notes:

1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

SP-12 depicts typical upland conditions within the adjacent pasture.

cerasiformis), red elderberry (Sambucus racemosa) and sword fern (Polystichum munitum).

2. Kitsap County Code (KCC) 19.200.220 – Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 6. WETLAND F

Wetland F - Information			
Location	Within agricultural field, south area of investigation		
WRIA	15 - Kitsap		
Local Jurisdiction	Kitsap County		
Rating	III (43 points) ¹		
Buffer Width	40 Feet ²		
Size	Approximately 0.20 acres (estimated from site visit)		
Cowardin Class	Palustrine Emergent		
HGM Class	Depressional and sloping		
Description Summary			



Description Summary			
Sample Plot	SP-12 and SP-13.		
Vegetation	Herbaceous: Colonial bentgrass (<i>Agrostis capillaris</i>), Kentucky bluegrass (<i>Poa Pratensis</i>), common rush (<i>Juncus effusus</i>), creeping buttercup (<i>Ranunculus repens</i>), field horsetail (<i>Equisetum arvense</i>) and grazed grasses.		
Soils	Meets criteria for hydric soil indicator Depleted Matrix (F3)		
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface and areas of standing water.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.		
Notes	Sloping and depressional system located within a grazed pasture.		
Western Washington Wetland Rating Functions Summary (43 points total)			
Water Quality	14 points: due to vegetation coverage, having no outlet and being within a grazed pasture (i.e. source of pollution).		
Hydrologic	10 points: due to vegetation coverage and having no outlet; however there are no adjacent streams and it does not provide opportunity for hydrologic functions.		
Habitat	19 points: due to having one vegetation class, no habitat interspersion and no special habitat features. The system has undisturbed connections to other upland and wetland areas.		
Buffer Condition	The wetland is bordered to the north, west and south by grazed pasture and to the east by fences and forest. The forested buffer is dominated by Douglas fir (<i>Pseudotsuga menziesii</i>), western red cedar (<i>Thuja plicata</i>), big leaf maple (<i>Acer macrophyllum</i>) and red alder (<i>Alnus rubra</i>) with an understory that consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>), red elderberry (<i>Sambucus racemosa</i>) and sword fern (<i>Polystichum munitum</i>). Sp-12 depicts typical upland conditions within the adjacent pasture.		

- Notes:
 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
 - 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 7. WETLAND G

Wetland G - Information		
Location	Within agricultural field, southwest of nursery	
WRIA	15 - Kitsap	
Local Jurisdiction	Kitsap County	
Rating	IV (25 points) ¹	
Buffer Width	40 Feet ²	
Size	Approximately 0.45 acre (estimated from site visit)	
Cowardin Class	Palustrine Forested and Emergent	
HGM Class	Sloping	



Description Summary		
Sample Plot	SP-14 and SP-17.	
Vegetation	<u>Herbaceous:</u> Common rush (<i>Juncus effusus</i>), creeping buttercup (<i>Ranunculus repens</i>), field horsetail (<i>Equisetum arvense</i>) and grazed grasses. <u>Trees:</u> Red alder (<i>Alnus rubra</i>)	
Soils	Meets criteria for hydric soil indicator Depleted Matrix (F3)	
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Sloping system located within a grazed pasture.	
Western Washington Wetland Rating Functions Summary (25 points total)		
Water Quality	8 points: due to vegetation coverage, and being within a grazed pasture (i.e. source of pollution).	
Hydrologic	3 points: due to vegetation coverage and structure; however there are no adjacent streams and it does not provide opportunity for hydrologic functions.	
Habitat	14 points: due to having two vegetation classes, low amount of habitat interspersion and no special habitat features. The system has undisturbed connections to other upland and wetland areas.	
Buffer Condition	The wetland is bordered to the east, south and west by grazed pasture and to the north by fences and relatively undisturbed forest. The forested buffer is dominated by Douglas fir (Pseudotsuga menziesii), western red cedar (Thuja plicata), big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) with an understory that consists of salmonberry (Rubus spectabilis), Indian plum (Oemleria cerasiformis), red elderberry (Sambucus racemosa) and sword fern (Polystichum munitum). SP-17 depicts typical upland habitat within the adjacent pasture.	

- Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
 Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the
- Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 8. WETLAND H

Wetland H - Inf	ormation
Location	Located in the west end of the project area and drains to Stream 1
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
Rating	III (36 points) ¹
Buffer Width	110 Feet ²
Size	Approximately 0.20 acre (estimated from site visit)
Cowardin Class	Palustrine Forested
HGM Class	Sloping
Description Summary	



Description Summary	
Sample Plot	SP-15 and SP-16
Vegetation	<u>Herbaceous:</u> Skunk cabbage (<i>Lysichiton americanus</i>), lady fern (<i>Athyrium filix-femina</i>) and field horsetail (<i>Equisetum arvense</i>) <u>Shrub:</u> salmonberry (<i>Rubus spectabilis</i>)
	<u>Trees:</u> Western red cedar (<i>Thuja plicata</i>) and red alder (<i>Alnus rubra</i>)
Soils	Meets criteria for hydric soil indicator Hydrogen Sulfide (A4)
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table
Notes	Headwater wetland to Stream 1.
Western Washington Wetland Rating Functions Summary (36 points total)	

Western Washington Wetland Rating Functions Summary (36 points total)	
Water Quality	4 points: due to vegetation coverage, and there being no pollution source within 150 feet of the wetland.
Hydrologic	10 points: due to vegetation coverage and structure; and having water flow to a stream that discharges near the nursery.
Habitat	22 points: due to having one vegetation class, low amount of habitat interspersion with some special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.
Buffer Condition	The forested buffer is dominated by Douglas fir (<i>Pseudotsuga menziesii</i>), western red cedar (<i>Thuja plicata</i>), big leaf maple (<i>Acer macrophyllum</i>) and red alder (<i>Alnus rubra</i>) with an understory that consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>), red elderberry (<i>Sambucus racemosa</i>) and sword fern (<i>Polystichum munitum</i>). SP-16 depicts typical adjacent upland habitat.

- Notes:
 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
 - 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 9. WETLAND I

Wetland I - Information	
Location	Within agricultural field adjacent to Streams 1 and 2
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
Rating	IV (18 points) ¹
Buffer Width	25 Feet ²
Size	Approximately 0.10 acre (estimated from site visit)
Cowardin Class	Palustrine Emergent
HGM Class	Sloping
Description Summary	



Description Summary		
Sample Plot	SP-17 and SP-18.	
Vegetation	Herbaceous: Common rush (<i>Juncus effusus</i>), creeping buttercup (<i>Ranunculus repens</i>), field horsetail (<i>Equisetum arvense</i>) and grazed grasses.	
Soils	Meets criteria for hydric soil indicator Depleted Matrix (F3)	
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Sloping system located within a grazed pasture. Not associated with Stream 1; there was an upland berm situated between the wetland and the stream. The wetland discharges into Stream 2.	
Western Washington Wetland Rating Functions Summary (18 points total)		
Water Quality	2 points: due to vegetation coverage, and being within a grazed pasture (i.e. source of pollution).	
Hydrologic	$\underline{0}$ points: due to vegetation coverage and structure; and it does not provide opportunity for hydrologic functions.	
Habitat	16 points: due to having one vegetation class, no habitat interspersion and no special habitat features. The system has undisturbed connections to other upland and wetland areas.	
Buffer Condition	The wetland is bordered to the west and south by a grazed agricultural field, to the east by fences and the dirt access road and to the north by a coniferous forest and Stream 1. SP-17 depicts typical upland habitat adjacent to the wetland.	

- 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
- 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 10. WETLAND J

Wetland J - Information		
Location	Within agricultural field adjacent to Wetland G and I	
WRIA	15 - Kitsap	
Local Jurisdiction	Kitsap County	
Rating	IV (12 points)1	
Buffer Width	25 Feet ²	Mary St. Mar
Size	Approximately 0.15 acre (estimated from site visit)	
Cowardin Class	Palustrine Emergent	
HGM Class	Sloping	
Description Sun	nmary	

Description Summary		
Sample Plot	SP-17 and SP-19.	
Vegetation	<u>Herbaceous:</u> Common rush (<i>Juncus effusus</i>), creeping buttercup (<i>Ranunculus repens</i>), field horsetail (<i>Equisetum arvense</i>) and grazed grasses.	
Soils	Meets criteria for hydric soil indicator Redox Dark Surface (F6)	
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Sloping system located within a grazed pasture. Water discharges into Stream 2.	
Western Washington Wetland Rating Functions Summary (12 points total)		
Water Quality	2 points: due to vegetation coverage, and being within a grazed pasture (i.e. source of pollution).	
Hydrologic	$\underline{\textbf{0 points:}}$ due to vegetation coverage and structure; and it does not provide opportunity for hydrologic functions.	
Habitat	10 points: due to having one vegetation class, no habitat interspersion and no special habitat features. The system does not have undisturbed connections to other upland and wetland areas.	
Buffer Condition	The wetland is situated within a grazed agricultural field. The wetland is bordered to the north, west and south by grazed pasture and fences and to the east by fences and the dirt access road. SP-17 depicts typical upland conditions adjacent to the wetland.	

- 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

 2. Kitsap County Code (KCC) 19.200.220 – Wetland buffer requirements. The final buffer width is subject to approval by the
- jurisdictional authority.

TABLE 11. WETLAND K

Wetland K - Information	
Location	Northeast of Wetland A in power line corridor
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
Rating	III (48 points)1
Buffer Width	40 Feet ²
Size	Approximately 0.26 acre (estimated from site visit)
Cowardin Class	Palustrine Scrub/Shrub and Emergent
HGM Class	Depressional
Description Commons	



Description Summary		
Sample Plot	SP-20 and SP-21.	
Vegetation	Herbaceous: Reed canarygrass (Phalarus arundinacea), common rush (Juncus effusus), creeping buttercup (Ranunculus repens), panicle bulrush (Scirpus microcarpus), and field horsetail (Equisetum arvense). Shrub: Nootka rose (Rosa nutkana), salmonberry (Rubus spectabilis) and Himalayan blackberry (Rubus armeniacus).	
Soils	Meets criteria for hydric soil indicator Hydrogen Sulfide (A4) and Depleted Matrix (F3).	
Hydrology	<u>Indicators:</u> saturated to the surface with water at 8 inches.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Depressional system located within a transmission line corridor. Separated from Wetland A by a ridgeline.	
Western Washington Wetland Rating Functions Summary (48 points total)		
Water Quality	20 points: due to vegetation coverage, having no outlet and development within 150 feet (i.e. source of pollution).	
Hydrologic	10 points: due to having no outlet and vegetation coverage; however there are no streams within 300 feet and it does not provide opportunity for hydrologic functions.	
Habitat	18 points: due to having two vegetation classes, low amount of habitat interspersion with no special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.	
Buffer Condition	The wetland is bordered to the east by forest and mowed lawn and to the north, south and west by relatively undisturbed forest. The forested buffer is dominated by Douglas fir (Pseudotsuga menziesii), western red cedar (Thuja plicata), big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) with an understory that consists of salmonberry (Rubus spectabilis), Indian plum (Oemleria cerasiformis), red elderberry (Sambucus racemosa) and sword fern (Polystichum munitum). SP-21 depicts typical upland conditions within the power line easement.	

- Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
 Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 12. WETLAND L

Wetland L - Info	rmation
Location	Within the transmission line corridor, south of Pacific Avenue
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
Rating	III (39 points) ¹
Buffer Width	80 Feet ²
Size	Approximately 2,000 square feet (estimated from site visit)
Cowardin Class	Palustrine Scrub/Shrub and Emergent
HGM Class	Depressional



Description Summary		
Sample Plot	SP-21 and SP-22	
Vegetation	Herbaceous: Reed canarygrass (<i>Phalarus arundinacea</i>), common rush (<i>Juncus effusus</i>), and creeping buttercup (<i>Ranunculus repens</i>). Shrub: Nootka rose (<i>Rosa nutkana</i>), salmonberry (<i>Rubus spectabilis</i>) and Himalayan blackberry (<i>Rubus armeniacus</i>).	
Soils	Meets criteria for hydric soil indicator Depleted Matrix (F3).	
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Depressional system located within a transmission line corridor.	
Western Washington Wetland Rating Functions Summary (39 points total)		
Water Quality	10 points: due to vegetation coverage, having no outlet and no development within 150 feet (i.e. source of pollution).	
Hydrologic	10 points: due to having no outlet and vegetation coverage; however there are no streams within 300 feet and it does not provide opportunity for hydrologic functions.	
Habitat	19 points: due to having two vegetation classes, low amount of habitat interspersion with no special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.	
Buffer Condition	The wetland is bordered on all sides by relatively undisturbed forest. The forested buffer is dominated by Douglas fir (<i>Pseudotsuga menziesii</i>), western red cedar (<i>Thuja plicata</i>), big leaf maple (<i>Acer macrophyllum</i>) and red alder (<i>Alnus rubra</i>) with an understory that consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>), red elderberry (<i>Sambucus racemosa</i>) and sword fern (<i>Polystichum munitum</i>). SP-21 depicts typical upland	

Notes:

1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

2. Kitsap County Code (KCC) 19.200.220 – Wetland buffer requirements. The final buffer width is subject to approval by the

conditions within the power line easement.

jurisdictional authority.

TABLE 13. WETLAND M

Wetland M - Information	
Location	South of Pacific Avenue near the tree line
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
Rating	III (35 points)1
Buffer Width	80 Feet ²
Size	Approximately 200 square feet (estimated from site visit)
Cowardin Class	Palustrine Forested
HGM Class	Depressional



Description Summary		
Sample Plot	SP-23 and SP-24	
Vegetation	Herbaceous: Slough sedge (Carex obnupta) and lady fern (Athyrium filix-femina) Shrub: English ivy (Hedera helix) salmonberry (Rubus spectabilis) and Nootka rose (Rosa nutkana). Trees: Western red cedar (Thuja plicata) and red alder (Alnus rubra).	
Soils	Meets criteria for hydric soil indicator Redox Dark Surface (F6).	
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Encountered a lot of debris (bricks, bottles, etc.) when digging sample plot.	
Western Washington V	Vetland Rating Functions Summary (35 points total)	
Water Quality	12 points: due to vegetation coverage, having no outlet and development within 150 feet (i.e. source of pollution).	
Hydrologic	7 points: due to having no outlet and vegetation coverage; however there are no streams within 300 feet and it does not provide opportunity for hydrologic functions.	
Habitat	16 points: due to having one vegetation class, low amount of habitat interspersion with no special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.	
Buffer Condition	The wetland is bordered to the north by a single family home and to the east, west and south by relatively undisturbed forest. The forested buffer is dominated by Douglas fir (Pseudotsuga menziesii), western red cedar (Thuja plicata), big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) with an understory that consists of salmonberry (Rubus spectabilis), Indian plum (Oemleria cerasiformis), red elderberry (Sambucus racemosa) and sword fern (Polystichum munitum). SP-24 depicts typical adjacent upland conditions.	

- Notes:

 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 14. WETLAND N

Wetland N - Inf	ormatio	n	
Location	South tree li	n of Pacific Avenue near the	
WRIA		Kitsap	
Local Jurisdiction		p County	
Rating	III (31	L points) ¹	
Buffer Width	80 Fe	eet ²	
Size		oximately 2,000 square feet nated from site visit)	
Cowardin Class	Palus	strine Emergent	
HGM Class	Depre	essional	
Description Summary			
Sample Plot		SP-25 and SP-27.	
Vegetation		Herbaceous: creeping buttercup (Ranunculus repens).	
Soils		Meets criteria for hydric soil indicator Depleted Matrix (F3).	
Hydrology		<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes		The wetland is partially mowed.	
Western Washi	ngton W	Vetland Rating Functions Summary (31 points total)	
Water Quality		8 points: due to vegetation coverage, having no outlet and development within 150 feet (i.e. source of pollution).	
Hydrologic		8 points: due to having no outlet and vegetation coverage; however there are no streams within 300 feet and it does not provide opportunity for hydrologic functions.	
Habitat		15 points: due to having one vegetation class, low amount of habitat interspersion with no special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.	
Buffer Condition	n	The wetland is bordered to the north by a single family home and to the east, west and south by relatively undisturbed forest. The forested buffer is dominated by Douglas fir (Pseudotsuga menziesii), western red cedar (Thuja plicata), big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) with an understory that consists of salmonberry (Rubus spectabilis), Indian plum (Oemleria cerasiformis), red elderberry (Sambucus	

Notes:

Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
 Kitsap County Code (KCC) 19.200.220 – Wetland buffer requirements. The final buffer width is subject to approval by the

racemosa) and sword fern (Polystichum munitum). SP-27 depicts typical adjacent upland

jurisdictional authority.

conditions.

TABLE 15. WETLAND 0

Wetland 0 - Information		
Location	East of the transmission line corridor and west of East Talbot Street NE	
WRIA	15 - Kitsap	
Local Jurisdiction	Kitsap County	
Rating	III (43 points) ¹	
Buffer Width	40 Feet ²	
Size	Approximately 10,000 square feet (estimated from site visit)	
Cowardin Class	Palustrine Forested	
HGM Class	Sloping and Depressional	



Description Summary		
SP-26 and SP-27		
Herbaceous: Skunk cabbage (Lysichiton americanus), lady fern (Athyrium filix-femina) and field horsetail (Equisetum arvense) Shrub: salmonberry (Rubus spectabilis) Trees: Western red cedar (Thuja plicata) and red alder (Alnus rubra)		
Meets criteria for hydric soil indicator Sandy Dark Surface (S7)		
<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table		
Wetland swale slopes down to the south and ponded in the south end of the system.		
Western Washington Wetland Rating Functions Summary (43 points total)		
16 points: due to vegetation coverage, having no outlet and development within 150 feet (i.e. source of pollution).		
10 points: due to having no outlet and vegetation coverage; however there are no streams within 300 feet and it does not provide opportunity for hydrologic functions.		
17 points: due to having one vegetation class, low amount of habitat interspersion with no special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.		
The wetland is bordered to the north by forest and a single family home and to the east, west and south by relatively undisturbed forest. The forested buffer is dominated by Douglas fir (Pseudotsuga menziesii), western red cedar (Thuja plicata), big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) with an understory that consists of salmonberry (Rubus spectabilis), Indian plum (Oemleria cerasiformis), red elderberry (Sambucus racemosa) and sword fern (Polystichum munitum). SP-27 depicts typical adjacent upland conditions.		

- Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).
 Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 16. WETLAND P

Wetland P - Information	
Location	West of the nursery and south of Carver Drive
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
Rating	IV (29 points) ¹
Buffer Width	50 Feet ²
Size	Approximately 0.08 acre (estimated from site visit)
Cowardin Class	Palustrine Emergent
HGM Class	Sloping
D	



Description Summary		
Sample Plot	SP-28	
Vegetation	<u>Herbaceous:</u> Common rush (<i>Juncus effusus</i>), creeping buttercup (<i>Ranunculus repens</i>), field horsetail (<i>Equisetum arvense</i>) and lady fern (<i>Athyrium filix-femina</i>).	
Soils	Meets criteria for hydric soil indicator Loamy Gleyed Matrix (F2)	
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Sloping system located within the gates of the nursery. Appeared to receive runoff from the adjacent dirt road.	
Western Washington Wetland Rating Functions Summary (29 points total)		
Water Quality	16 points: due to vegetation coverage, and receiving untreated stormwater runoff (i.e. source of pollution).	
Hydrologic	4 points: due to vegetation coverage and structure; and holding back some water that could flood a building directly downslope of the wetland.	
Habitat	$\underline{9 \text{ points:}}$ due to having one vegetation class, no habitat interspersion and no special habitat features. The system is bordered on all sides by disturbed areas and has no buffers or connections to other undisturbed habitats.	
Buffer Condition	The buffer for this wetland is highly disturbed. The wetland is bordered to the east by a building within the nursery, to the south by mowed grasses, to the west by a chain link fence and dirt road and to the north by mowed grasses, fences and buildings.	

- Notes:

 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 17. WETLAND Q

Wetland I - Information	
Location	Northeast of Wetland B
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
Rating	IV (29 points) ¹
Buffer Width	25 Feet ²
Size	Approximately 300 square feet (estimated from site visit)
Cowardin Class	Palustrine Emergent
HGM Class	Depressional
Description Summary	



Description Summary		
Sample Plot	SP-3, SP-4 and SP-33.	
Vegetation	<u>Herbaceous:</u> Common rush (<i>Juncus effusus</i>), Broadleaf cattail (<i>Typha latifolia</i>) and bentgrass species (<i>Agrostis species</i>)	
Soils	Meets criteria for hydric soil indicator Depleted Matrix (F3)	
Hydrology	<u>Indicators:</u> saturated to the surface with water at the surface.<u>Source:</u> direct precipitation, surface runoff, high groundwater table.	
Notes	Appears to be an isolated depressional system. Upland habitat was identified between Wetland ${\bf Q}$ and Wetland ${\bf B}$.	
Western Washington Wetland Rating Functions Summary (29 points total)		
Water Quality	10 points: due to vegetation coverage, having no outlet, and not being near or adjacent to any potential sources of pollution.	
Hydrologic	4 points: due to vegetation coverage and structure, having no outlet; and it does not provide opportunity for hydrologic functions.	
Habitat	15 points: due to having one vegetation class, no habitat interspersion and no special habitat features. The system has undisturbed connections to other upland and wetland areas.	
Buffer Condition	The wetland is bordered to the north, west and south by upland and wetland forested habitat and to the east by an actively used trail. SP-3 and SP-4 depict typical upland habitat adjacent to the wetland.	

- Notes:

 1. Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008).

 2. Kitsap County Code (KCC) 19.200.220 Wetland buffer requirements. The final buffer width is subject to approval by the invitational and pairs.
 - jurisdictional authority.



TABLE 18. MACHIAS CREEK

Machias Creek - Info	rmation
Location	West of the town of Port Gamble
WRIA	15 - Kitsap
Local Jurisdiction	Kitsap County
DNR Stream Type	F1
Buffer Width	150 feet ²
Average Channel Width	8 feet ³
Gradient	0 to 3 percent
Duration	Permanent
Description Summary	
Documented Fish Use	Coho (Oncorhynchus kisutch) and Resident cutthroat trout (Salmo clarkia clarkia)4.
Connectivity	Flows through the development site to the north and eventually flows into the Hood Can near Port Gamble.
Channel Description	Gravels, sands and cobbles.
Riparian/Buffer Condition	The stream is vegetated with a forested canopy dominated by coniferous tree species including Douglas fir (<i>Pseudotsuga menziesii</i>) and western red cedar (<i>Thuja plicata</i> The riparian vegetation along Machias Creek consists of salmonberry (<i>Rubus spectabilis</i> Indian plum (<i>Oemleria cerasiformis</i>) and red elderberry (<i>Sambucus racemosa</i>).
Notes	The creek is approximately 1.2 miles long and fed from groundwater seeps, a sprir collection box and wetlands. It flows generally north and within the area of assessment it

Notes:

- 1. Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) (DNR, 2007). 2. KCC 19.300.310 (Fish and wildlife habitat conservation area categories) and KCC Table 19.300.315 (Fish and Wildlife Habitat Conservation Area Development Standards).

situated in the bottom of a ravine.

 Average Channel Width derived from site observations and 2005 survey.
 Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (WDFW, 2011), and 2005 Washington State Department of Fish and Wildlife Priority Habitat and Species Data.

TABLE 19. STREAM 1

Stream 1 - Information	
West of the nursery and extends from Wetland H to Stream 2	
15 - Kitsap	
Kitsap County	
NS ¹	
50 feet ²	
1 feet ³	
2 to 5 percent	
Seasonal	



Description Summary		
Documented Fish Use	Not a mapped stream and no documentation of fish use ⁴ .	
Connectivity	Flows east from Wetland H and discharges into Stream 2. Stream 2 directs water into Wetland E and into Stream 4 which discharges into Machias Creek and eventually into Hood Canal.	
Channel Description	Gravels and sands.	
Riparian/Buffer Condition	The stream is vegetated with a forested canopy dominated by coniferous tree species including Douglas fir (<i>Pseudotsuga menziesii</i>) and western red cedar (<i>Thuja plicata</i>). The riparian vegetation along the stream consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>) and red elderberry (<i>Sambucus racemosa</i>).	
Notes	The creek is approximately 320 feet long and fed from groundwater and wetlands. It flows generally east.	

- 1. Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) (DNR, 2007).
- 2. KCC 19.300.310 (Fish and wildlife habitat conservation area categories) and KCC Table 19.300.315 (Fish and Wildlife Habitat Conservation Area Development Standards).
- 3. Average Channel Width derived from site observations.
 4. Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (WDFW, 2011), and 2005 Washington State Department of Fish and Wildlife Priority Habitat and Species Data.



TABLE 20. STREAM 2

Stream 2 - Information			
Location	West of the nursery and parallels the existing dirt road.		
WRIA	15 - Kitsap		
Local Jurisdiction	Kitsap County		
DNR Stream Type	NS¹		
Buffer Width	50 feet ²		
Average Channel Width	2 feet ³		
Gradient	2 to 5 percent		
Duration	Seasonal		



Description Summary		
Documented Fish Use	Not a mapped stream and no documentation of fish use ⁴ .	
Connectivity	This waterbody is a road ditch that parallels the dirt road. The north end flows south and the south end of the ditch flows north to the low spot in topography where it then is culverted under the dirt road and directed into Wetland E. From Wetland E the water flows into Stream 4 and discharges into Machias Creek and eventually into Hood Canal.	
Channel Description	Gravels and sands.	
Riparian/Buffer Condition	This stream is a ditch and has little riparian vegetation. Himalayan blackberry and grasses overhang much of the ditch.	
Notes	The creek is approximately 1,200 feet long and fed from road runoff, wetlands, Stream 1 and Stream 3.	

- 1. Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) (DNR, 2007). 2. KCC 19.300.310 (Fish and wildlife habitat conservation area categories) and KCC Table 19.300.315 (Fish and Wildlife Habitat Conservation Area Development Standards).
- 3. Average Channel Width derived from site observations.

 4. Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (WDFW, 2011), and 2005 Washington State Department of Fish and Wildlife Priority Habitat and Species Data.

TABLE 21. STREAM 3

Stream 3 - Information		
Location	West of the nursery and extends east to Stream 2	
WRIA	15 - Kitsap	
Local Jurisdiction	Kitsap County	
DNR Stream Type	NP¹	
Buffer Width	50 feet ²	
Average Channel Width	4 feet ³	
Gradient	2 to 5 percent	
Duration	Permanent	
Description Summary		



Description Summary			
Documented Fish Use	Not a mapped stream and no documentation of fish use ⁴ .		
Connectivity	Flows east from a seep and discharges into Stream 2. Stream 2 directs water into Wetland E and into Stream 4 which discharges into Machias Creek and eventually into Hood Canal.		
Channel Description	Gravels, sediment and sands.		
Riparian/Buffer Condition	The stream is vegetated with a forested canopy dominated by coniferous tree species including Douglas fir (<i>Pseudotsuga menziesii</i>) and western red cedar (<i>Thuja plicata</i>). The riparian vegetation along the stream consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>) and red elderberry (<i>Sambucus racemosa</i>).		
Notes	The creek is approximately 700 feet long and fed from groundwater. It flows generally east into Stream 2.		

- 1. Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) (DNR, 2007). 2. KCC 19.300.310 (Fish and wildlife habitat conservation area categories) and KCC Table 19.300.315 (Fish and Wildlife
- Habitat Conservation Area Development Standards).
- 3. Average Channel Width derived from site observations.

 4. Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (WDFW, 2011), and 2005 Washington State Department of Fish and Wildlife Priority Habitat and Species Data.



TABLE 22. STREAM 4

Stream 4 - Information	n	
Location	West of the nursery and extends east to Stream 2	
WRIA	15 - Kitsap	美女 多数型从外外的工作。从为是是
Local Jurisdiction	Kitsap County	
DNR Stream Type	NP¹	
Buffer Width	50 feet ²	
Average Channel Width	2 feet ³	
Gradient	0 to 3percent	
Duration	Permanent	
Description Summary		
Documented Fish Use	Not a mapped stream and no documentation of fish use ⁴ .	
Connectivity	Flows east from Wetland E and then heads north and discharges into Machias Creek which eventually drains into Hood Canal.	
Channel Description	Gravels, sediment and sands.	
Riparian/Buffer Condition	The stream is vegetated with a forested canopy dominated by coniferous tree species including Douglas fir (<i>Pseudotsuga menziesii</i>) and western red cedar (<i>Thuja plicata</i>). The riparian vegetation along the stream consists of salmonberry (<i>Rubus spectabilis</i>), Indian plum (<i>Oemleria cerasiformis</i>) and red elderberry (<i>Sambucus racemosa</i>).	

Notes:

Notes

Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) (DNR, 2007).
 KCC 19.300.310 (Fish and wildlife habitat conservation area categories) and KCC Table 19.300.315 (Fish and Wildlife Habitat Conservation Area Development Standards).

The creek is approximately 700 feet long and fed from wetlands and groundwater.

- 3. Average Channel Width derived from site observations.
- 4. Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (WDFW, 2011), and 2005 Washington State Department of Fish and Wildlife Priority Habitat and Species Data.

TABLE 23. PORT GAMBLE/HOOD CANAL SHORELINE

Port Gamble/Hood Canal Shoreline - Information North and east boundary of Location the project area WRIA 15 - Kitsap **Local Jurisdiction** Kitsap County Waterbody Type Shoreline Shoreline Urban1 Designation **Buffer Width** 50 feet2 **Description Summary** Shoreline A majority of the shoreline is lined with riprap and consists of revetments and bulkheads. Description Some large woody debris (LWD) is present along the shoreline. Upland vegetation adjacent to the shoreline largely consists of invasive species in a narrow **Upland Buffer** 10-foot strip along the upland edge. The vegetation is dominated by Himalayan blackberry Condition (Rubus armenaicus) and scotch broom (Cytisus scoparius). Numerous docks and piers are located within Port Gamble extending from the shoreline. Notes Most of these structures are derelict. The shoreline within Hood Canal, within the project area appears to be free of dock and pier structures.

- 1. According to the Kitsap County Washington Shoreline Master Plan Environmental Designations Map (March 22, 2004)
- 2. KCC Table 19.300.315 (Fish and Wildlife Habitat Conservation Area Development Standards).

NON-WETLAND AREAS

During the field investigation, GeoEngineers biologists came upon several suspected wetland areas that required additional data gathering. Several sample plots were conducted throughout these areas and they are discussed in more detail below.

Center of Town

Within the center of Port Gamble town, there is a depression (Appendix A, Photograph 14). However, under closer examination, the area is not dominated by hydrophytic vegetation and there was no hydrology or evidence of wetland hydrology (SP-29). In addition, the soils were not hydric as the moistened color was 10 YR 3/2 with no redoximorphic features. Therefore, this area was determined to be non-wetland.

Reservoir

Along one of the existing trails created from an old logging or maintenance road, west of Wetland B and east of Wetland D, is a reservoir (Appendix A, Photographs 11 and 12). At this location is an old well house with pipe that directs water into a fenced-off depression. At the time of the site visit, the depression was filled with water and the depression appeared to be lined with concrete. GeoEngineers biologists circled the reservoir but found no evidence of adjacent wetland habitat. The pipe that directs water into the reservoir consists of white PVC piping and extends from underground to the old well house. Water from the reservoir exits via a riprap waterfall and is culverted under the trail and eventually drains into Wetland B.

A formal sample plot was not conducted because the reservoir appears to be manmade and there was no evidence of adjacent wetland habitat. Therefore, this area is determined to be non-wetland.

Non-Wetland Ditch

A ditch was identified as extending easterly just east of NE Carver Drive near the Hood Canal nursery (Appendix A, Photograph 15) and parallels an old abandoned road. This ditch drains to Machias Creek. Two sample plots (SP-30 and SP-31) were conducted within the ditch to complete a wetland determination. This area is dominated by a hydrophytic vegetation community that consists of red alder, salmonberry and creeping buttercup. SP-30 was conducted in a wet spot in the ditch and soils at this location meet the indicators for redox dark surface, which is considered a hydric soil. However, the area that had hydric soils was approximately 10 feet long and 2 feet wide and downstream of the area did not have hydric soils (SP-31). Therefore, this ditch was not delineated as wetland and was determined to be non-wetland habitat.

Field North of Carver Drive

A small field north of Carver Drive was identified as having hydrophytic vegetation that consists of a dying western red cedar tree, common rush and a variety of facultative grasses (Appendix A, Photograph 16). However, there was no hydrology and no evidence of wetland hydrology in this area (SP-32). In addition, the soils are not hydric as the moistened color was 10 YR 3/2 with no redoximorphic features. Therefore, this area was determined to be non-wetland.

SUMMARY

GeoEngineers performed wetland and stream delineations within the Port Gamble property for the proposed project. A total of 17 wetlands (Wetlands A through Q) and five streams (Machias Creek and Streams 1 through 4) were identified and delineated during the field investigation. The table below (Table 24) provides a summary of the critical area and associated buffers.

TABLE 24. WETLAND SUMMARY OF CATEGORY AND BUFFER WIDTH

Wetland / Stream Name	Wetland Category / Stream Type ¹	Buffer Width ² (feet)
Wetland A	Category II	150
Wetland B	Category II	150
Wetland C	Category III	150
Wetland D	Category IV	40
Wetland E	Category III	150
Wetland F	Category III	40
Wetland G	Category IV	40
Wetland H	Category III	110
Wetland I	Category IV	25
Wetland J	Category IV	25
Wetland K	Category III	40
Wetland L	Category III	80
Wetland M	Category III	80
Wetland N	Category III	80
Wetland O	Category III	40
Wetland P	Category IV	50
Wetland Q	Category IV	25
Machias Creek	Type F	150
Stream 1	Type NS	50
Stream 2	Type NS	50
Stream 3	Type NP	50
Stream 4	Type NP	50

Notes:

As noted previously, this project will be subject to an EIS. Part of the process requires the analysis of potential project impacts and mitigation, as necessary. During that process, a separate report will be provided describing potential impacts and possible mitigation. Final approvals will include



^{1.} Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington, (Hruby, revised 2008) and stream typing in accordance with KCC 19.300.310 (Fish and wildlife habitat conservation area categories) 2. Kitsap County Code (KCC) 19.200.220 – Wetland buffer requirements and KCC Table 19.300.315 (Fish and Wildlife Habitat Conservation Area Development Standards). The final buffer widths are determined by land intensity use and is subject to approval by the jurisdictional authority.

any required mitigation. Further, the proposed PBD and Preliminary Plat do not allow construction to commence. Separate construction permits will be needed, and if any proposal includes additional wetland or stream impacts that were not analyzed as part of the EIS, further analysis may be required.

LIMITATIONS

GeoEngineers has prepared this Wetland and Stream Delineation in general accordance with the scope and limitations of our proposal. Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted practices for wetland and stream delineation in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

This report has been prepared for the exclusive use of the Pope Resources, authorized agents and regulatory agencies following the described methods and information available at the time of the work. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. The information contained herein should not be applied for any purpose or project except the one originally contemplated.

The applicant is advised to contact all appropriate regulatory agencies (local, state and federal) prior to design or construction of any development to obtain necessary permits and approvals.

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Notes:

- 1. The locations of all features shown are approximate.
- 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
- 3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Reference: ESRI Data & Maps, Street Maps 2005; ESRI I3 Imagery; USFWS/NWI; National Hydrography dataset; USDA-NRCS Soils. Transverse Mercator, State Plane South, North American Datum 1983 North arrow oriented to grid north

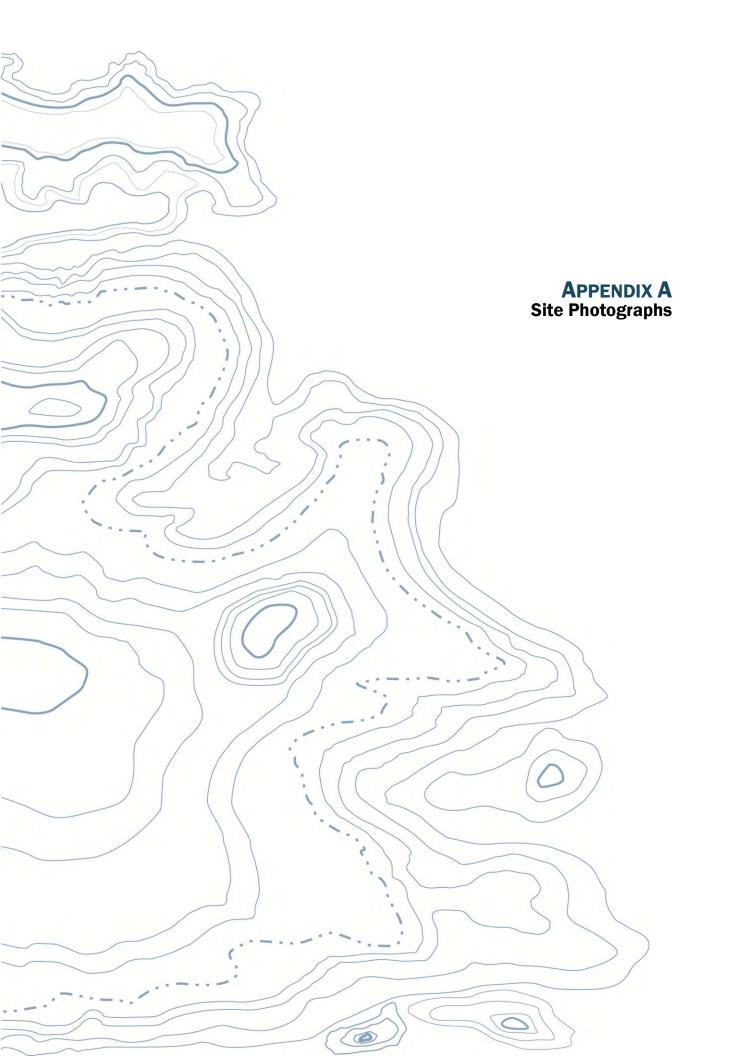
Mapped Wetlands and Soils Data

Port Gamble Redevelopment Plan Kitsap County, Washington



Figure 2







Photograph 1 Southern portion of the Port Gamble shoreline.



Photograph 2 Northern portion of the Port Gamble shoreline, adjacent to the lumber mill.



Photograph 3
Typical residential conditions around the town of Port Gamble.



Photograph 4
Overlook of the agricultural fields in the southwest portion of the project area.

Port Gamble Redevelopment Plan Kitsap County, Washington





Photograph 5
Agricultural fields within the southwest portion of the project area.



Photograph 6
Typical forested conditions in the southwest portion of the property.



Photograph 7
Typical forested conditions near the center of the project area.



Photograph 8 Model airplane field in the southeastern project area.

Port Gamble Redevelopment Plan Kitsap County, Washington





Photograph 9 Trail between Wetland A (right) and Wetland B (left).



Photograph 10
Actively used trail that extends roughly north/south near the project area's center.



Photograph 11
Apparent man-made reservoir located near the southern portion of the project area.



Photograph 12
Culvert crossing from the reservoir, under the trail and into Wetland B.

Port Gamble Redevelopment Plan Kitsap County, Washington





Photograph 13
Recent beaver activity noted in Wetlands A and B.



Photograph 14 Depression in the center of town.



Photograph 15 Non-wetland ditch east of Carter Drive.



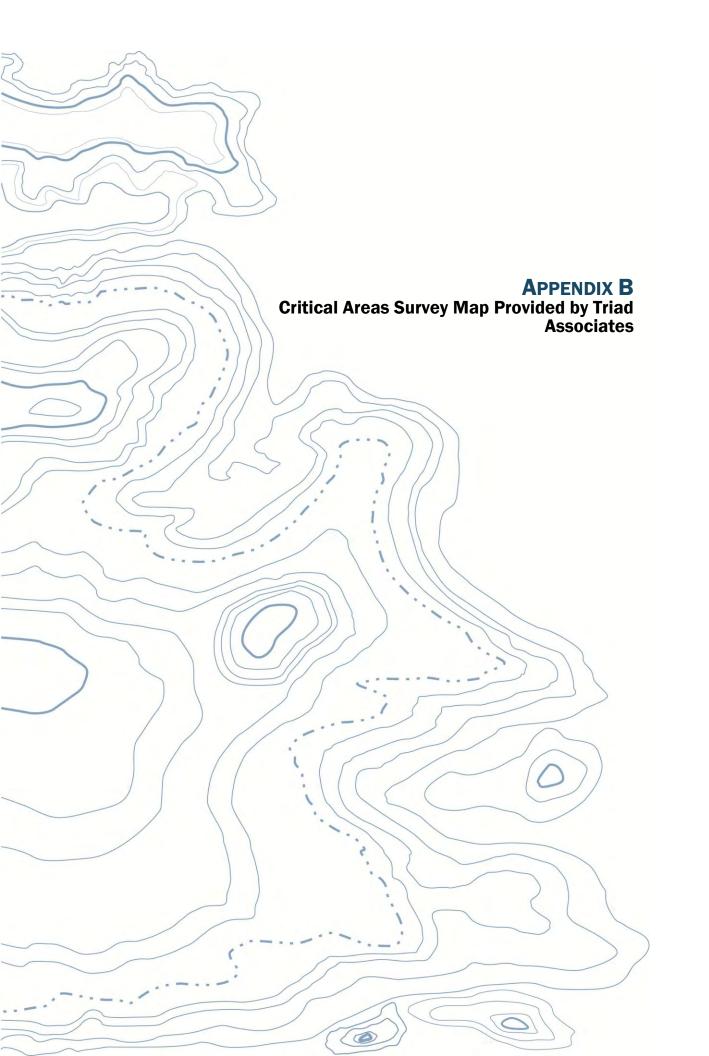
Photograph 16

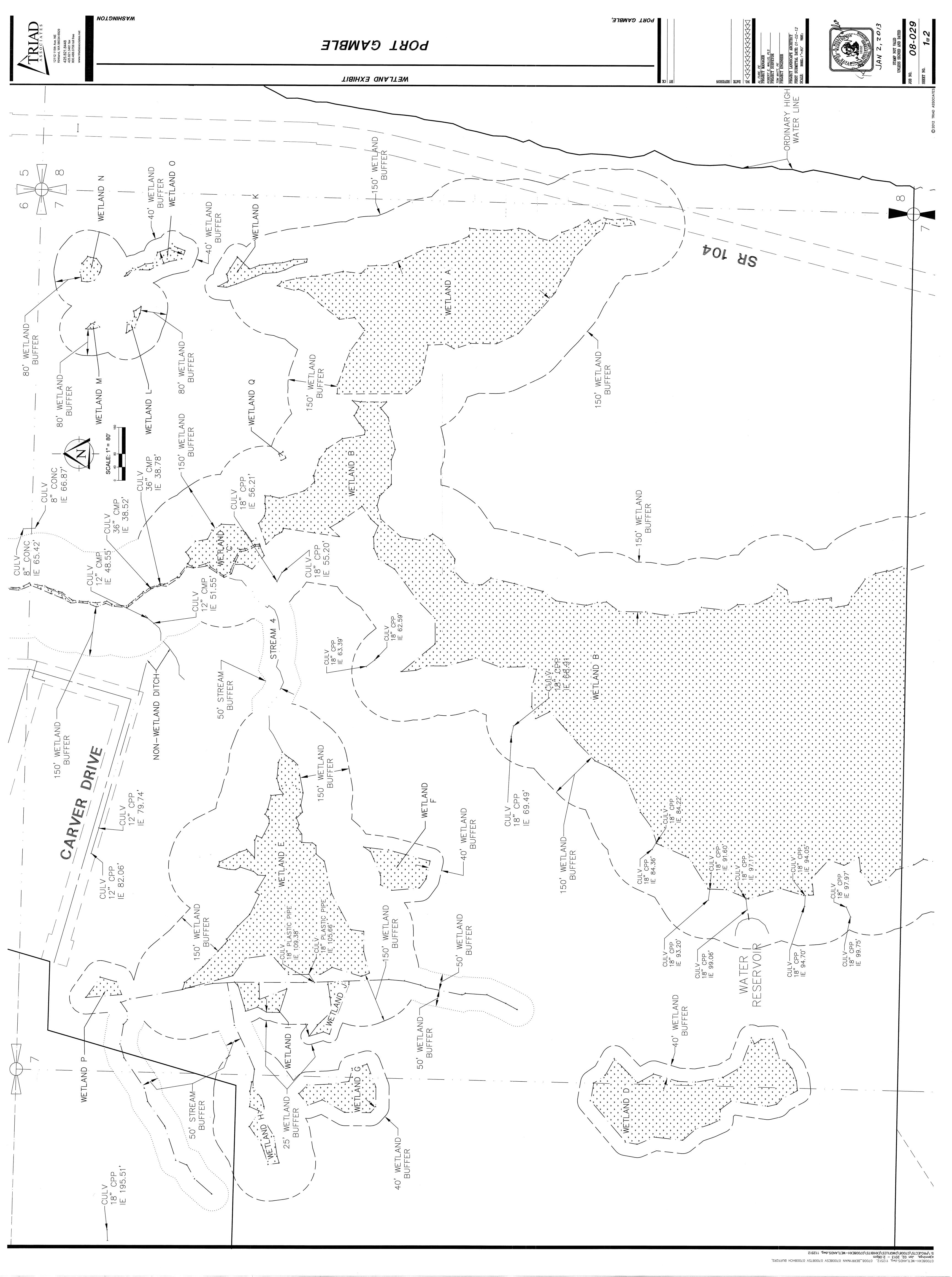
Non-wetland habitat within the field north of Carter

Drive.

Port Gamble Redevelopment Plan Kitsap County, Washington







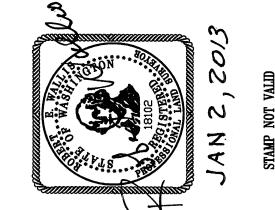
WETLAND EXHIBIT

E CANALLIS PLE
ROJECT MANAGER

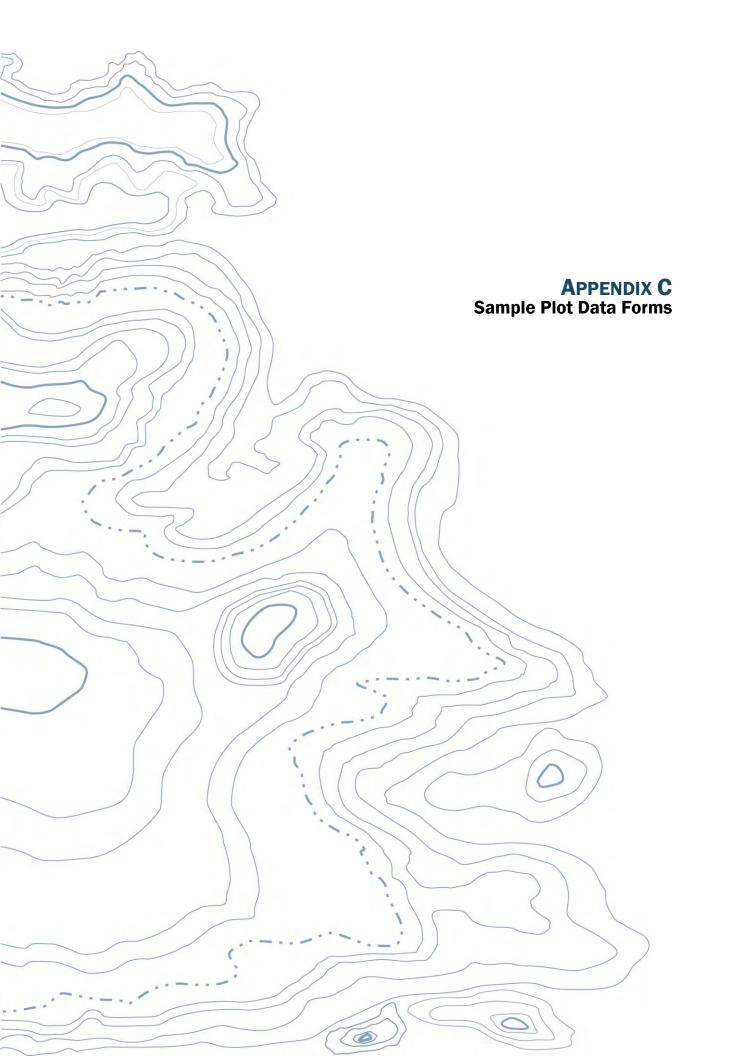
NATT. PE
ROJECT ENGINEER

ROJECT LANDSCAPE ARCHITECT

CALE: HORIZ.: 1"=200' VERT.:







Project/Site:	Port Gamble Re	deve	lopmerاد	nt Plan		City/County:	Kitsap County	<u>/</u>	Sampling Date: 11/14	/2012
Applicant/Owner:	Pope Resources	i					_ State	: <u>W</u> A	Sampling Point: SP-1	
Investigator(s):	J. Dadisman, A.	Wrig	ght			Section/Townsh	ip/Range:			
Landform (hillslope, terra	ace, etc.):	Dep	ression			Local Relief (con	icave, convex, r	none): <u>Concave</u>	Slope (%): <2%	
Subregion (LLR):	<u>A</u>				Lat:		Long	: Datum:_		
Soil Map Unit Name:	Mckenna gravel	lly lo	am, 6-8	3% slopes	i		_ N	WI Classification: PSSC		
Are climatic/hydrologic c	onditions on the	site	typical f	for this ti	me of year?		✓ Yes	No (if no, explain	in Remarks.)	
Are Vegetation	Soil H	lydro	ology	signif	icantly distu	rbed?	Are "normal	circumstances" present?	✓ Yes No	
Are Vegetation	Soil H	lydro	ology	natur	ally problem	natic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FIND						1				
Hydrophytic Vegetation I Hydric Soil Present? Weltand Hydrology Prese		>	Yes Yes Yes	No No No No		Is the sampled a Wetland?	rea within a	✓ Yes No		
Remarks:										
VEGETATION - Use s	cientific name	es o	f plant		solute %	Dominant	Indicator			
Tree Stratum_				AL	Cover	Species?	Status	Dominance Test Worksheet:		
1. Red Alder (Alnus rubro	a)				10	yes	FAC	Number of dominant Species		
2. Western Hemlock (Tsu	ıga heterophylla,)	-		5	yes	FACU	That are OBL, FACW, or FAC:	4	(A)
3. 4.										
4.								Total Number of Dominant		
					15	= Total Cover		Species Across All Strata:	5	(B)
Sapling/Shurb Stratum	•									
1. Salmonberry (Rubus s	pectabilis)				5	yes	FAC	Percent of dominant Species		(• (5)
2.							-	That are OBL, FACW, or FAC:	80	(A/B)
2. 3. 4.							_	Prevalence Index Worksheet:		
5.								Total % Cover of:	Multiply by:	
J.					5	= Total Cover	_	OBL Species	x 1 = 0	
Herb Stratum						_		FACW Species	x 2 = 0	
1. Common Duckweed (L	.emna minor)				15	yes	OBL	FAC Species	x 3 = 0	
2. Water Parsley (Oenan)			5	yes	OBL	FACU Species	x 4 = 0	
3.								UPL Species	x 5 = 0	
4.							-	Column Totals:	(A) <u>0</u> (B))
5.										
3. 4. 5. 6. 7.						1		Prevalence Index =	= B/A =	
7.				_			-		hama.	
8. 9. 10.								Hydrophytic Vegetation Indicat 1 - Rapid Test for Hydroph		
10								2 - Dominance Test is >50%		
11.						1		3 - Prevalence Index is ≤3.0		
					20	= Total Cover	_	_	ions ¹ (provide supporting data in	
Woody Vine Stratum					20	- 10(0) COVE		Remarks or on a separate s	heet.	
<u>1.</u> 2.								5 - Wetland Non-Vascular		
2.							-	Problem Hydrophytic Vege	tation (Explain)	
% Bare Ground	in Herb Stratum				0	= Total Cover		¹ Indicators of hydric soil and w unless disturbed or problemati	etland hydrology must be present ic.	.,
Remarks:				_				Hydrophytic Vegetation Pres		

SOIL Sampling Point: SP-1 Depth Matrix **Redox Features** Type¹ (inches) Color (moist) Color (moist) Loc² Texture Remarks Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: Sandy Redox (S5) 2 cm Muck (A10) Histisol (A1) Stripped Matrix (S6) Red Parent Material (TF2) Histic Epipedon (A2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dard Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) ✓ Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) ³Indicators of hydrophytic vegetation and wetland ☐ Thick Dark Surface (A12) Redox Dark Surface (F6) hydrology must be present, unless disturbed or Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) problematic. Restrictive Layer (if present): Hydric Soil Present? Type: ✓ Yes No Depth (inches): Remarks: Area is permanently ponded right up to raised gravel walking path **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (except MLRA ✓ Surface Water (A1) Water-Stained Leaves (B9) (MLRA ✓ High Water Table (A2) 1, 2, 4A, and 4B) 1, 2, 4A, and 4B) ✓ Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturated Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduction Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Wetland Hydrology Present? Depth (inches): Surface Water Present? Yes No 0 ✓ Yes No Water Table Present? Depth (inches): 0 No Yes Saturation Present? Depth (inches): 0 Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

Project/Site:	Port Gamble Redevelop	ment Plan	_ City/County:	Kitsap Count	У	Sampling Date: 11/13/2012
Applicant/Owner:	Pope Resources			State	e: <u>WA</u>	Sampling Point: SP-2
Investigator(s):	J. Dadisman, A. Wright		_ Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	ace, etc.): depress	ion	_ Local Relief (con	icave, convex,	none): <u>concave</u>	Slope (%): <u>0-2%</u>
Subregion (LLR):	Α	Lat:		_ Long	g: Datum:	
Soil Map Unit Name:	Mckenna gravelly loam				NWI Classification: PSSC	
Are climatic/hydrologic of	conditions on the site typi	cal for this time of year?	,	✓ Yes	No (if no, explain in	n Remarks.)
Are Vegetation	Soil Hydrology	significantly distu	ırbed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally probler	natic?	(if needed, e	xplain any answers in Remarks.)	
SUMMARY OF FIND						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	 Y∈	s 🔲 No	Is the sampled a Wetland?	irea within a	✓ Yes No	
Remarks:						
VEGETATION - Use s	scientific names of pl	ants.				
Tree Stratum	·	Absolute %	Dominant	Indicator	Dominance Test Worksheet:	
		Cover	Species?	Status		
1. Grand fir (Abies grand			yes	FACU	Number of dominant Species	2 (4)
2. Red Alder (Alnus rubr 3.	a)	5	yes	FAC	That are OBL, FACW, or FAC:	3 (A)
<i>4.</i>			-		Total Number of Dominant	
71		25	= Total Cover	_	Species Across All Strata:	5 (B)
Sapling/Shurb Stratum			_		- Species / teress / timetrates	(=)
1. Salmonberry (Rubus s	spectabilis)	40	yes	FAC	Percent of dominant Species	
2.	•				That are OBL, FACW, or FAC:	60 (A/B)
3.					<u> </u>	
4.					Prevalence Index Worksheet:	
5.						Multiply by:
		40	= Total Cover			x 1 =0
Herb Stratum		••				x 2 = 0
1. Lady Fern (Athyrium f		20	yes	FACU	-	x 3 =
2. Broadleaf Cattail (Typ		30	yes	OBL		x 4 = 0
3. Soft Rush (Juncus effu 4. Panicled Bulrush (Scir		10	no	FACW	<u> </u>	x = 5 = 0 (A) 0 (B)
5. Common Duckweed (no no	OBL OBL	Column Totals:	(A) <u> </u>
6.	Lemma mimory			OBL	Prevalence Index =	B/A = #DIV/0!
<i>7.</i>			-	-	1	
8.					Hydrophytic Vegetation Indicate	ors:
9.					1 - Rapid Test for Hydrophy	
10.					2 - Dominance Test is >50%	
11.					3 - Prevalence Index is ≤3.0	
Woody Vine Stratum		75	= Total Cover		4 - Morphological Adaptation	ons ¹ (provide supporting data in
1.					5 - Wetland Non-Vascular P	
2.				-	Problem Hydrophytic Veget	
<u></u>		0	= Total Cover		7.	
% Bare Ground	in Herb Stratum	0%			¹ Indicators of hydric soil and we unless disturbed or problemation	etland hydrology must be present,
Remarks:					Hydrophytic Vegetation Preso	ent?

SOIL Sampling Point: SP-2 Depth Matrix Redox Features (inches) Color (moist) Color (moist) Type¹ Loc² Texture Remarks Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: Sandy Redox (S5) 2 cm Muck (A10) Histisol (A1) Stripped Matrix (S6) Red Parent Material (TF2) Histic Epipedon (A2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dard Surface (TF12) √ Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) ✓ Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Indicators of hydrophytic vegetation and wetland ☐ Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) hydrology must be present, unless disturbed or Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) problematic. Restrictive Layer (if present): Hydric Soil Present? Type: ✓ Yes No Depth (inches): Remarks: Permanently ponded, standing water/very saturated soils through sample plot **HYDROLOGY Wetland Hydrology Indicators:** Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (except MLRA ✓ Surface Water (A1) Water-Stained Leaves (B9) (MLRA ✓ High Water Table (A2) 1, 2, 4A, and 4B) 1, 2, 4A, and 4B) ✓ Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturated Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduction Iron (C4) Shallow Aguitard (D3) ☐ Iron Deposits (B5) Recent Iron Reduction Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) ☐ Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) **Field Observations:** Wetland Hydrology Present? Depth (inches): Surface Water Present? ✓ Yes No 3 ✓ Yes No Water Table Present? Depth (inches): 0 No Yes Saturation Present? Depth (inches): ✓ Yes ☐ No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

Project/Site:	Port Gamble Red	developmer	nt Plan	_City/County:	Kitsap Count	У	Sampling Date: 11/1	13/2012
Applicant/Owner:	Pope Resources				State	e: <u>WA</u>	Sampling Point: SP-3	
Investigator(s):	J. Dadisman, A.	Wright		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E		
Landform (hillslope, terr	ace, etc.):	depression		Local Relief (con	cave, convex,	none): <u>concave</u>	Slope (%): <u>0-2%</u>	
Subregion (LLR):	Α		Lat:		_ Long	g: Datum	ı:	
Soil Map Unit Name:	Kapaosin gravell	ly loam 6-15	5% slopes		^	NWI Classification: PSSC		
Are climatic/hydrologic of	conditions on the	site typical f	or this time of year?		✓ Yes	☐ No (if no, expla	in in Remarks.)	
Are	Soil H	lydrology	significantly distu	rbed?	Are "normal	circumstances" present?	✓ Yes No	
Are Vegetation	Soil H	lydrology	naturally problem	natic?	(if needed, e	xplain any answers in Remarks	.)	
SUMMARY OF FIND								
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres			✓ No ✓ No ✓ No	Is the sampled a Wetland?	rea within a	Yes V No		
Remarks:								
VEGETATION - Use s	scientific name	es of plant	ts.					
Tree Stratum		Ī	Absolute %	Dominant	Indicator	Dominance Test Worksheet	•	
	<i>e</i> .)		Cover	Species?	Status			
1. Grand fir (Abies grand 2. Western Red Cedar (1				yes	FACU FAC	Number of dominant Species That are OBL, FACW, or FACS		(4)
3.	пији рпсисиј			yes	FAC	Tillat are OBL, FACW, or FAC.		(A)
4.			-		_	Total Number of Dominant		
			50	= Total Cover		Species Across All Strata	n: 5	(B)
Sapling/Shurb Stratum				_				,
1. Salmonberry (Rubus s	spectabilis)		20	yes	FAC	Percent of dominant Species		
2.				-		That are OBL, FACW, or FAC	40	(A/B)
3.				_				
4.					_	Prevalence Index Worksheet		
5.						Total % Cover of:	Multiply by:	
			20	= Total Cover		OBL Species	x 1 = 0	
Herb Stratum			20		FACIL	FACW Species	x 2 = 0	
1. Sword Fern (Polystich 2. Trailing blackberry (R				yes	FACU FACU	FAC Species 50 FACU Species 13	_	
3.	ubus ursinus)			yes	FACU	UPL Species	x = 5 = 5 = 5 = 5 = 5 = 5 = 5 = 5 = 5 =	
4.					_	Column Totals: 18		(B)
5.						1	,	` '
6.						Prevalence Inde	x = B/A =3.73	
7.				- 		_		
8.						Hydrophytic Vegetation Indi		
9.					_	1 - Rapid Test for Hydro		
10.					<u> </u>	2 - Dominance Test is >5		
11.						3 - Prevalence Index is ≤		
Woody Vine Stratum			95	= Total Cover		Remarks or on a separate		1
<u>1.</u> 2.						5 - Wetland Non-Vascula Problem Hydrophytic Ve		
۲۰			0	= Total Cover	_	٦.		
% Bare Ground	in Herb Stratum	50		- Total Covel		¹ Indicators of hydric soil and unless disturbed or problem	wetland hydrology must be prese atic.	nt,
Remarks:						Hydrophytic Vegetation P	resent? Yes V No	
						<u> </u>		

Depth	Matr	х	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 2/2	100					Sandy loam	
4-16	10YR 3/6	100					Sandy loam	
					_			
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Ma	trix, CS=Covered or Co	oated Sand Gr	ains. ² Location:	PL=Pore Linin	ıg, M=Matrix	
Hydric Soil Indicators: (A	applicable to all LF	Rs, unless of	therwise noted.)				Indicators for F	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muck	(A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6)					Material (TF2)
Black Histic (A3)		H	Loamy Mucky Miner		t MLRA 1)			w Dard Surface (TF12)
Hydrogen Sulfide (A4	1)	П	Loamy Gleyed Matri		•			lain in Remarks)
Depleted Below Dark		П	Depleted Matrix (F3					
Thick Dark Surface (A	•		Redox Dark Surface				³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Minera	•		Depleted Dark Surfa	. ,			hydrology must	t be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions (problematic.	•
Restrictive Layer (if pres					Hydric Soil Presen	t?	·	
Type:								☐ Yes ✓ No
Depth (inches):								☐ Yes ✓ No
Remarks:	<u> </u>							
HYDROLOGY								
Wetland Hydrology Indi	cators:							
Primary Indicators (minir		ed; check all	that apply)				Secondary India	cators (2 or more required)
, ,	·	,	,,				,	, ,
Surface Water (A1)			Water-Stained L	eaves (B9) (ex	cept MLRA		☐ Water-Stai	ned Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4E	3)			1, 2, 4A, a	nd 4B)
Saturation (A3)			Salt Crust (B11)				Drainage P	atterns (B10)
Water Marks (B1)			Aquatic Inverteb	orates (B13)			Dry-Season	Water Table (C2)
Sediment Deposits (32)		Hydrogen Sulfid	e Odor (C1)			Saturated \	/isible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos	oheres along L	iving Roots (C3)		Geomorphi	ic Position (D2)
Algal Mat or Crust (B	4)		Presence of Red	uction Iron (C	4)		Shallow Aq	uitard (D3)
Iron Deposits (B5)			Recent Iron Red				FAC-Neutra	al Test (D5)
Surface Soil Cracks (E	-		Stunted or Stres	sed Plants (D1	L) (LRR A)			Mounds (D6) (LRR A)
Inundation Visible or			Other (Explain in	n Remarks)			Frost-Heav	e Hummocks (D7)
Sparsely Vegetated (Concave Surface (E	8)						
Field Observations:		_		Wetl	and Hydrology Pr	esent?		
Surface Water Present?	∐ Yes	☑ No	Depth (inches):		_			
Water Table Present?	∐ Yes		Depth (inches):		_			☐ Yes ✓ No
Saturation Present?	Yes	✓ No	Depth (inches):		_			
(includes capillary fringe)		.,			\			
Describe Recorded Data	(stream gauge, mo	onitoring wel	i, aeriai pnotos, previd	ous inspection	s), if available:			
Domorke								
Remarks:								

Project/Site:	Port Gamble Re	develo	pment	Plan	City/County:	Kitsap Count	Ту		Sampling Date:	11/13/2012
Applicant/Owner:	Pope Resources	i				State	e: <u>WA</u>		Sampling Point:	SP-4
Investigator(s):	J. Dadisman, A.	Wright	t		Section/Townsh	ip/Range:	Sec 7 Town 27N Range	e 2E		
Landform (hillslope, terr	ace, etc.):	Hillslo	pe		Local Relief (con	icave, convex,	none): none		Slope (%):	0-2%
Subregion (LLR):	А			Lat:		_ Long	g:	Datum:		
Soil Map Unit Name:	Mckenna gravel	lly loan	<u>n</u>				NWI Classification: none			
Are climatic/hydrologic of	conditions on the	site ty	pical fo	r this time of year?		✓ Yes	No (if no,	, explain in I	Remarks.)	
Are	Soil H	lydrolo	gy	significantly distu	rbed?	Are "normal	circumstances" present?	?	✓ Yes No	0
Are Vegetation	Soil H	lydrolo	gy	naturally problem	natic?	(if needed, e	xplain any answers in Re	marks.)		
SUMMARY OF FIND				_	_					
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres			Yes Yes Yes	/ No	Is the sampled a Wetland?	rea within a	Yes V No			
Remarks:										
VEGETATION - Use s	scientific name	es of _l	plants	•						
Tree Stratum				Absolute %	Dominant	Indicator	Dominance Test Worl	ksheet:		
				Cover	Species?	Status				
1. Red Alder (Alnus rubr 2. Western Red Cedar (T	•			10 60	no	FAC FAC	Number of dominant S That are OBL, FACW, of		2	(4)
3. Western Hemlock (Ts)		20	yes	FACU	Tillat are Obt, FACW, t	JI FAC.		(A)
4.	ugu neteropnyna)	<u>/</u>			. <u>yes</u>	TACO	Total Number of Dom	inant		
				90	= Total Cover		Species Across All		6	(B)
Sapling/Shurb Stratum					_			_		()
1. Salal (Gaultheria shal	llon)			5	yes	FACU	Percent of dominant S	pecies		
2. Salmonberry (Rubus s	pectabilis)			10	yes	FAC	That are OBL, FACW, o	or FAC:	33.33333333	(A/B)
3.										
4.						_	Prevalence Index Wor			
5.							Total % Cover o		1ultiply by:	
				15	= Total Cover		OBL Species		1 = 0	
Herb Stratum 1. Sword Fern (Polystich	um munitum)			20	VOS	FACU	FACW Species FAC Species		2 = 0 $3 = 240$	
2. Lady Fern (Athyrium)				10	yes	FACU	FACU Species		4 = 220	
3.	mx-jemmuj				. <u>yes</u>	TACO	UPL Species		5 = 0	
4.							Column Totals:	135 (A		(B)
5.				_	n		1 -	,		
<i>6</i> .							Prevalenc	e Index = B,	/A = 3.41	
7.									_	
8.							Hydrophytic Vegetatio			
9.				-		_	1 - Rapid Test for		2 Vegetation	
10.							2 - Dominance Tes			
11.						_			1, .,	
Woody Vine Stratum				30	= Total Cover		Remarks or on a se	parate shee		data in
1.						-	5 - Wetland Non-\			
2.				0	= Total Cover	-	Problem Hydroph	_		
% Bare Ground	in Herb Stratum		50%		- Total Cover		¹ Indicators of hydric so unless disturbed or pr		and hydrology must be	present,
Remarks:							Hydrophytic Vegeta	ition Presen	nt? Yes 🗸	No
							•			

Берип	IVIatri	Х	Redox realures					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-12	10YR 2/2	100					loam	
			_				_	
					1).			
¹ Type: C=Concentration,	D=Depletion RM-	Reduced Ma	atrix CS=Covered or C	oated Sand Gra	ins ² Location	PL=Pore Linin	g M=Matrix	
Hydric Soil Indicators: (A				oatea sana Gra	iiii.	T E-1 OFC EITH		Problematic Hydric Soils ³ :
Hydric Soil Indicators: (/	Applicable to all LK	iks, uniess o	itherwise noted.)				indicators for P	roblematic hydric soils:
Uistical (A1)			Candy Daday (CE)				2 cm Muck	(410)
Histisol (A1)			Sandy Redox (S5)					Material (TF2)
Histic Epipedon (A2)		<u> </u>	Stripped Matrix (S6)	•	NAI DA 4\			
Black Histic (A3)	4)	<u> </u>	Loamy Mucky Mine		IVILKA 1)			w Dard Surface (TF12)
Hydrogen Sulfide (A			Loamy Gleyed Matr				Uther (Expl	ain in Remarks)
Depleted Below Dar			Depleted Matrix (F3					
Thick Dark Surface (•		Redox Dark Surface					ydrophytic vegetation and wetland
Sandy Mucky Miner	al (S1)		Depleted Dark Surfa	ace (F7)			hydrology must	be present, unless disturbed or
Sandy Gleyed Matrix		L	Redox Depressions				problematic.	
Restrictive Layer (if pres	sent):			H	ydric Soil Presen	t?		
Type:								☐ Yes ✓ No
Depth (inches):								103 🗸 110
Remarks:					•			
HYDROLOGY								
Wetland Hydrology Indi			146-4				C	
Primary Indicators (mini	mum of one requir	ed; check al	i that apply)				Secondary India	cators (2 or more required)
				(00) ((DO) (DA) DA
Surface Water (A1)			Water-Stained I		cept MLKA			ned Leaves (B9) (MLRA
High Water Table (A	.2)		1, 2, 4A, and 4I	B)			1, 2, 4A, ar	
Saturation (A3)			Salt Crust (B11)					atterns (B10)
Water Marks (B1)			Aquatic Invertel					Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfid					isible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos				= :	c Position (D2)
Algal Mat or Crust (34)		Presence of Rec	luction Iron (C4	.)		Shallow Aq	uitard (D3)
Iron Deposits (B5)			Recent Iron Red	luction Tilled So	oils (C6)		FAC-Neutra	al Test (D5)
Surface Soil Cracks (B6)		Stunted or Stres	ssed Plants (D1)) (LRR A)		Raised Ant	Mounds (D6) (LRR A)
Inundation Visible o	n Aerial Imagery (B	57)	Other (Explain i	n Remarks)			Frost-Heave	e Hummocks (D7)
Sparsely Vegetated	Concave Surface (B	8)						
Field Observations:				Wetla	nd Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):		1			
Water Table Present?	Yes	✓ No	Depth (inches):		-			Yes V No
Saturation Present?	Yes	✓ No	Depth (inches):		1			
(includes capillary fringe			· · · / <u>-</u>		-[
Describe Recorded Data		nitoring we	II. aerial photos, previ	ous inspections), if available:			
	36-7		,		,,			
Remarks:								

Project/Site:	Port Gamble Redevelopment	Plan	City/County:	Kitsap Count	У	Sampling Date: 11/13/2012
Applicant/Owner:	Pope Resources			State	e: <u>W</u> A	Sampling Point: SP-5
Investigator(s):	J. Dadisman, A. Wright		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	ace, etc.): Hillslope		Local Relief (con	cave, convex, r	none): <u>none</u>	Slope (%): <u>0-2%</u>
Subregion (LLR):	Α	Lat:		_ Long	g: Datum:	
Soil Map Unit Name:	Poulsbo gravelly sandy loam,	0-6% slopes		_ N	IWI Classification: none	
Are climatic/hydrologic of	conditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain in	Remarks.)
Are	Soil Hydrology	significantly distur	bed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No	
Remarks:						
	scientific names of plants.					
	beleficine names of plants	Absolute %	Dominant	Indicator	Danis and Tank Washalanda	
<u>Tree Stratum</u>		Cover	Species?	Status	Dominance Test Worksheet:	
1. Red Alder (Alnus rubr	•	20	yes	FAC	Number of dominant Species	
2. Western Red Cedar (1		30	yes	FAC	That are OBL, FACW, or FAC:	3 (A)
3. Douglas Fir (Pseudots	uga menziesii)	20	yes	FACU	Total Number of Deminent	
4.		70	= Total Cover	-	Total Number of Dominant Species Across All Strata:	4 (B)
Sapling/Shurb Stratum	,	70	- Total Cover		Species Across Air Strata.	4 (B)
1.					Percent of dominant Species	
2.				-	That are OBL, FACW, or FAC:	75 (A/B)
3.				- 1		· · · · ·
4.					Prevalence Index Worksheet:	
5.					Total % Cover of: N	Ոultiply by:
		0	= Total Cover		OBL Species x	1 =0
Herb Stratum						2 =0
1. Lady Fern (Athyrium f	ilix-femina)	15	yes	FAC		3 = 0
2.				-	· —	4 = 0
<i>3. 4.</i>				-		5 = 0 A) 0 (B)
<i>5.</i>				-	Column Totals: 0 (A	
6.					Prevalence Index = B	3/A =
7.]	
<i>8</i> .					Hydrophytic Vegetation Indicator	rs:
9.				_	📗 🔲 1 - Rapid Test for Hydrophyti	c Vegetation
10.				-	2 - Dominance Test is >50%	
11.					3 - Prevalence Index is $\leq 3.0^1$	
Woody Vine Stratum		15	= Total Cover		4 - Morphological Adaptation Remarks or on a separate she	ns ¹ (provide supporting data in eet.
1.					5 - Wetland Non-Vascular Pla	
2.					Problem Hydrophytic Vegeta	tion (Explain)
		0	= Total Cover		¹ Indicators of hydric soil and wet	land hydrology must be present,
% Bare Ground	in Herb Stratum 40%				unless disturbed or problematic.	
Remarks:					Hydrophytic Vegetation Preser	nt?

Depth	Matri	х	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 3/1	100					loam	
6-16	10YR 5/1	65	10YR 6/6	30	С	М	loam	
			10YR 2/1	5	С	М	loam	streaked throughout
¹ Type: C=Concentration	, D=Depletion, RM-	Reduced Mat	rix, CS=Covered or C	Coated Sand G	rains. ² Location:	: PL=Pore Linir	ng, M=Matrix	
Hydric Soil Indicators: (Applicable to all LR	Rs, unless ot	herwise noted.)				Indicators for I	Problematic Hydric Soils ³ :
☐ Histisol (A1)			Sandy Redox (S5)				2 cm Muck	(A10)
Histic Epipedon (A2)	H	Stripped Matrix (S6	5)				: Material (TF2)
Black Histic (A3)	,	H	Loamy Mucky Mine		ot MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	A4)	H	Loamy Gleyed Matr		•		_	lain in Remarks)
Depleted Below Dai			Depleted Matrix (F3					,
Thick Dark Surface	` '	Ħ	Redox Dark Surface				³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Miner		Ī	Depleted Dark Surfa					t be present, unless disturbed or
Sandy Gleyed Matri			Redox Depressions				problematic.	•
Restrictive Layer (if pre			'		Hydric Soil Preser	nt?	'	
Туре								□ Voc □ No
Depth (inches)	:							✓ Yes No
Remarks:	<u>'</u>		<u> </u>					
HYDROLOGY								
Wetland Hydrology Ind	licators:							
Primary Indicators (min		ed; check all t	that apply)				Secondary Indi	cators (2 or more required)
Surface Water (A1)			■ Water-Stained	Leaves (B9) (e	xcept MLRA			ned Leaves (B9) (MLRA
High Water Table (A2)		1, 2, 4A, and 4	В)			1, 2, 4A, a	nd 4B)
✓ Saturation (A3)			Salt Crust (B11))			Drainage P	atterns (B10)
Water Marks (B1)			Aquatic Inverte					n Water Table (C2)
Sediment Deposits	(B2)		Hydrogen Sulfic					Visible on Aerial Imagery (C9)
Drift Deposits (B3)					Living Roots (C3)		= '	ic Position (D2)
Algal Mat or Crust (B4)		Presence of Rec				Shallow Aq	
Iron Deposits (B5)			Recent Iron Rec				FAC-Neutra	
Surface Soil Cracks	• •		Stunted or Stre		1) (LRR A)			Mounds (D6) (LRR A)
Inundation Visible o	O , .	•	Other (Explain i	in Remarks)			☐ Frost-Heav	e Hummocks (D7)
Sparsely Vegetated	Concave Surface (B	8)						
Field Observations:			5 (:	Wet	land Hydrology Pr	esent?		
Surface Water Present?		V No	Depth (inches):		_			□ Vaa □ Na
Water Table Present?	∐ Yes	✓ No	Depth (inches):		<u></u>			✓ Yes No
Saturation Present?	✓ Yes	∐ No	Depth (inches):		6			
(includes capillary fringe Describe Recorded Data		nitoring well	agrial photos provi	ious inspection	as) if available:			
Pescribe kecolaea Data	ı (ətream gauge, mo	mitoring well,	, aeriai photos, previ	ious irispectior	is), ii avaiidble:			
Remarks:								
Remarks.								

Project/Site:	Port Gamble Re	deve	lopme	nt Pla	n	_City/County:	Kitsap Count	у		Sampling Date:	11/13/2012
Applicant/Owner:	Pope Resources	i					State	e: WA		Sampling Point:	SP-6
Investigator(s):	J. Dadisman, A.	Wrig	ht			Section/Townsh	ip/Range:	Sec 7 Town 27N Range	2E		
Landform (hillslope, terra	ace, etc.):	depr	ression			Local Relief (con	ıcave, convex, ı	none): concav	<u>'e</u>	Slope (%):	0-2%
Subregion (LLR):	<u>A</u>			_	Lat:		Long	g:C	atum:		_
Soil Map Unit Name:	Mckenna gravel	lly loa	am					IWI Classification: none			_
Are climatic/hydrologic c	onditions on the	site t	ypical	for th	is time of year?		✓ Yes	☐ No (if no,	explain in Ren	narks.)	
Are Vegetation	Soil H	lydrol	logy	sig	gnificantly distu	rbed?	Are "normal	circumstances" present?		✓ Yes N	lo
Are Vegetation	Soil H	lydrol	logy	na	aturally problen	natic?	(if needed, e	xplain any answers in Rer	narks.)		
SUMMARY OF FIND		_		_		•					
Hydrophytic Vegetation I Hydric Soil Present? Weltand Hydrology Prese		\ \ \	Yes Yes Yes	□ N	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No			
Damada											
Remarks:											
VEGETATION - Use s	scientific name	es of	plan	ts.	Absolute %	Dominant	Indicator	1			
<u>Tree Stratum</u>					Cover	Species?	Status	Dominance Test Work	sheet:		
1. Red Alder (Alnus rubro	•				50	yes	FAC	Number of dominant S			
2. Western Red Cedar (T	huja plicata)				5	no	FAC	That are OBL, FACW, or	FAC:	4	(A)
3.								Total Number of Demis	ant		
4.					55	= Total Cover	_	Total Number of Domir Species Across All		5	(B)
Sapling/Shurb Stratum				_		Total Cover		Species Across Air .			(6)
1. Salmonberry (Rubus s	pectabilis)				10	yes	FAC	Percent of dominant Sp	pecies		
2.	, ,				-		-	That are OBL, FACW, or		80	(A/B)
3.											
4.						•		Prevalence Index Work			
5.								Total % Cover of		iply by:	
				_	10	= Total Cover		OBL Species	x 1 =		-
Herb Stratum	iii famainan				20		FAC	FACW Species	x 2 =		_
 Lady Fern (Athyrium factor) Youth-on-Age (Tolmie) 					20 15	yes	FAC FAC	FAC Species FACU Species	x 3 =		_
3. Sword Fern (Polystich					30	yes	FACU	UPL Species	x 4 = x 5 =		
4.	um mamcam,				30	yes	TACO	Column Totals:	0 (A)	0	
5.											
6.							_	Prevalence	Index = B/A =	=	
7.											_
8.							_	Hydrophytic Vegetation			
9.								1 - Rapid Test for H		egetation	
10.							_	2 - Dominance Test			
11.								3 - Prevalence Inde			
Woody Vine Stratum					65	= Total Cover		4 - Morphological A		provide supporting	data in
1.								5 - Wetland Non-V			
2.								Problem Hydrophy	tic Vegetation	າ (Explain)	
					0	= Total Cover		¹ Indicators of hydric so	il and wetland	d hydrology must be	e present,
% Bare Ground	in Herb Stratum		40)%				unless disturbed or pro			
Remarks:								Hydrophytic Vegetat	ion Present?	✓ Yes □	No
								-			

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 2/2	90	10YR 3/6	10	С	М	loam	
¹ Type: C=Concentration,	D=Depletion, RM-R	educed Matr	ix, CS=Covered or C	oated Sand G	rains. ² Location:	PL=Pore Linin	ıg, M=Matrix	
Hydric Soil Indicators: (A	Applicable to all LRR	s, unless oth	nerwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Mucl	< (A10)
Histic Epipedon (A2)			Stripped Matrix (S6))				t Material (TF2)
Black Histic (A3)			Loamy Mucky Mine	•	pt MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	4)		Loamy Gleyed Matr				Other (Exp	olain in Remarks)
Depleted Below Dark			Depleted Matrix (F3					
Thick Dark Surface (Redox Dark Surface				³ Indicators of I	nydrophytic vegetation and wetland
Sandy Mucky Minera	•		Depleted Dark Surfa					st be present, unless disturbed or
Sandy Gleyed Matrix		_	Redox Depressions	. ,			problematic.	•
Restrictive Layer (if pres					Hydric Soil Presen	t?	<u> </u>	
Type:					ĺ			□ v □ N.
Depth (inches):								✓ Yes No
Remarks:					!			
Tremarks.								
HYDROLOGY								
Wetland Hydrology Indi Primary Indicators (mini		d. chack all t	hat annly)				Secondary Indi	icators (2 or more required)
Frimary mulcators (minin	num of one require	u, check all t	nat apply)				Secondary mu	icators (2 or more required)
Surface Water (A1)			☐ Water-Stained I	eaves (R9) (e	vcent MIRA		□ Water-Sta	ined Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4I		ACCPL WILLIA		1, 2, 4A, a	
Saturation (A3)	2)		Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Inverte					n Water Table (C2)
Sediment Deposits (R2)		Hydrogen Sulfic					Visible on Aerial Imagery (C9)
Drift Deposits (B3)	52)				Living Roots (C3)			nic Position (D2)
Algal Mat or Crust (E	24)		Presence of Rec				=	quitard (D3)
Iron Deposits (B5)) - +)		Recent Iron Red	-	•			ral Test (D5)
Surface Soil Cracks (D61		Stunted or Stres				=	: Mounds (D6) (LRR A)
Inundation Visible o	•	١	Other (Explain i		(LNN A)			ve Hummocks (D7)
Sparsely Vegetated	• , ,	•		ii Keiliai K5)			FIOSC-FIEAR	re Hullillocks (D7)
Field Observations:	concave Surface (Do)		\M\ot	land Hydrology Pr	ocont?		
Surface Water Present?	Yes	✓ No	Depth (inches):	WCC		C3CIIC:		
Water Table Present?	Yes		Depth (inches):					✓ Yes No
Saturation Present?	✓ Yes	=	Depth (inches):		0			103 110
(includes capillary fringe					<u>~</u>			
Describe Recorded Data		itoring well	aerial photos previ	ous inspection	ns), if available:			
2 cochine necoraca Data	(ac. cam gaage, mon	Well,	20.101 p110100, p1CVI	Jas mopection	, ii avallabici			
Remarks:								

Project/Site:	Port Gamble Re	devel	opment	Plan	City/County:	Kitsap Count	У		Sampling Date:	11/15/2012
Applicant/Owner:	Pope Resources	i				State	e: WA		Sampling Point: S	SP-7
Investigator(s):	J. Dadisman, D.	Conlir	1		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2	<u> </u>		
Landform (hillslope, terr	ace, etc.):	Hillslo	эре		Local Relief (cor	icave, convex,	none): none		Slope (%): <u>1</u>	L-2%
Subregion (LLR):	Α			_ Lat:		_ Long	g: Da	tum:		
Soil Map Unit Name:	Mckenna gravel	lly loa	m				NWI Classification: none			
Are climatic/hydrologic of	conditions on the	site ty	pical fo	or this time of year?		✓ Yes	No (if no, ex	plain in Rem	arks.)	
Are	Soil H	lydrolo	ogy	significantly distu	rbed?	Are "normal	circumstances" present?		✓ Yes No	
Are Vegetation	Soil H	lydrolo	ogy	naturally problem	natic?	(if needed, e	xplain any answers in Rema	ırks.)		
SUMMARY OF FIND				_	_					
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres			Yes Yes Yes		Is the sampled a Wetland?	rea within a	Yes V No			
Remarks:										
VEGETATION - Use s	scientific name	es of	plants	5.						
Tree Stratum				Absolute %	Dominant	Indicator	Dominance Test Worksh	eet:		
1 Mostown Rod Codew /7	Thuis plicate)			Cover 30	Species?	Status	4			
1. Western Red Cedar (T 2. Bigleaf Maple (Acer n				25	yes	FAC FACU	Number of dominant Spe That are OBL, FACW, or I		2	(A)
3. Douglas Fir (Pseudots				40	yes	FACU	That are obe, thew, or t	, tc.	-	(71)
4.	aga menziesiij			- 10	700	17100	Total Number of Domina	nt		
				95	= Total Cover		Species Across All St	rata:	7	(B)
Sapling/Shurb Stratum							·			
1. Red Elderberry (Samb				15	yes	FACU	Percent of dominant Spe	cies		
2. Beaked Hazelnut (Car	ylus cornuta)			20	yes	FACU	That are OBL, FACW, or F	AC:	28.57142857	(A/B)
3.										
4.				_		_	Prevalence Index Worksh			
5.					Tatal Carren		Total % Cover of:	Multip		
Harb Ctratum				35	= Total Cover		OBL Species	x 1 =	0	
Herb Stratum 1. Sword Fern (Polystich	um munitum)			35	yes	FACU	FACW Species FAC Species	x 2 = 40 x 3 =	120	
2. Lady Fern (Athyrium f				10	yes	FAC	FACU Species	135 x 4 =	540	
3.	inx jenimuj				<u> </u>	1710	UPL Species	x 5 =	0	
4.							Column Totals:	175 (A)	660	(B)
5.					· 			<u> </u>		
<i>6</i> .							Prevalence I	ndex = B/A =	3.77	
7.									_	
8.							Hydrophytic Vegetation			
9.				_		_	1 - Rapid Test for Hy		getation	
10.				_			2 - Dominance Test i 3 - Prevalence Index			
11.										
Woody Vine Stratum				45	= Total Cover		4 - Morphological Ac Remarks or on a sepa	rate sheet.		ata in
1.				_		_	5 - Wetland Non-Vas			
2.				0	= Total Cover	-	Problem Hydrophyti	_		
% Bare Ground	in Herb Stratum		20%	·	– Total Cover		¹ Indicators of hydric soil unless disturbed or prob		hydrology must be p	oresent,
Remarks:							Hydrophytic Vegetatio	n Present?	Yes 🗸	No
							-			

Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type¹ 0-3 10YR 3/6 100 Type¹ Type¹ Type¹ Type²	
	Loc ² Texture Remarks
1 05 1011(5/0 100	loam
3-9 10YR 4/4 100	loam
9-16 7.5YR 3/4 100	loam
7.510 7.510,4	
	·
	· · · · · · · · · · · · · · · · · · ·
	·
	,
¹ Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=	Doro Lining M-Matrix
	Pore Lining, M=Matrix
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Construction (CC)	7 2 Must (MO)
Histisol (A1) Sandy Redox (S5) Stringed Matrix (SC)	2 cm Muck (A10)
Histic Epipedon (A2) Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dard Surface (TF12)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Depleted Matrix (F3)	4
Thick Dark Surface (A12) Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)	hydrology must be present, unless disturbed or
Sandy Gleyed Matrix (S4) Redox Depressions (F8)	problematic.
Restrictive Layer (if present): Hydric Soil Present?	
Туре:	☐ Yes ✓ No
Depth (inches):	
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
	Secondary Indicators (2 or more required)
	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA
Primary Indicators (minimum of one required; check all that apply)	<u> </u>
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA	Water-Stained Leaves (B9) (MLRA
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA I, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Water Marks (B1) Water Marks (B1) Aquatic Invertebrates (B13)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturated Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site:	Port Gamble Redevelopment	Plan	_City/County:	Kitsap Count	У	Sampling Date: 11/15/2012
Applicant/Owner:	Pope Resources			State	e: <u>W</u> A	Sampling Point: SP-8
Investigator(s):	J. Dadisman, D. Conlin		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terra	ace, etc.): depression		Local Relief (con	cave, convex, ı	none): <u>concave</u>	Slope (%): <u>N/A</u>
Subregion (LLR):	<u>A</u>	_ Lat:		Long	g: Datum:	
Soil Map Unit Name:	Mckenna gravelly loam				IWI Classification: none	
Are climatic/hydrologic o	conditions on the site typical fo	or this time of year?		✓ Yes	☐ No (if no, explain in	Remarks.)
Are	Soil Hydrology	significantly distu	rbed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally problem	natic?	(if needed, e	xplain any answers in Remarks.)	
SUMMARY OF FIND			_			
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes	
Remarks:						
	scientific names of plants	3.				
Tree Stratum	P	Absolute %	Dominant	Indicator	Dominance Test Worksheet:	
		Cover	Species?	Status	_	
 Western Red Cedar (T 2. 	'huja plicata)	20	yes	FAC	Number of dominant Species	3 (4)
<i>3.</i>		_		-	That are OBL, FACW, or FAC:	3 (A)
4.					Total Number of Dominant	
		20	= Total Cover		Species Across All Strata:	4 (B)
Sapling/Shurb Stratum			-		_	
1. Salmonberry (Rubus s	pectabilis)	5	yes	FAC	Percent of dominant Species	
2.					That are OBL, FACW, or FAC:	75 (A/B)
3.						
4.					Prevalence Index Worksheet:	
5.						Multiply by:
		5	= Total Cover			× 1 = 0
Herb Stratum	(ilin famina)	10		FAC		(2 = 0
1. Lady Fern (Athyrium f 2. Sword Fern (Polystich			yes	FAC FACU	· -	(3 = <u>0</u> (4 = <u>0</u>
3.	um mumtumj		yes	FACU		(4 = <u>0</u> (5 = 0
4.				-		(A) 0 (B)
5.				-		
6.					Prevalence Index =	B/A =
7.					_	
8.					Hydrophytic Vegetation Indicate	
9.				- 1	1 - Rapid Test for Hydrophyt	ic Vegetation
10.				_ ·	2 - Dominance Test is >50% 3 - Prevalence Index is $\leq 3.0^1$	
11.				-		
Woody Vine Stratum		15	= Total Cover		Remarks or on a separate she	
1. 2.		-			5 - Wetland Non-Vascular Pl Problem Hydrophytic Veget:	
		0	= Total Cover	· · · · · · · · · · · · · · · · · · ·	7.	
% Bare Ground	in Herb Stratum80%		322. 30.01		Indicators of hydric soil and we unless disturbed or problematic	tland hydrology must be present,
Remarks:					Hydrophytic Vegetation Prese	ent?

Depth	Matri	ix	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 2/1	100					loam	
					- 1			
¹ Type: C=Concentration	, D=Depletion, RM-	Reduced Ma	trix, CS=Covered or C	oated Sand Gra	ains. ² Location:	: PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (Applicable to all LR	Rs, unless o	therwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muc	k (A10)
Histic Epipedon (A2)	П	Stripped Matrix (S6))				it Material (TF2)
Black Histic (A3)	,	П	Loamy Mucky Mine		t MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	4)	П	Loamy Gleyed Matr		·			olain in Remarks)
Depleted Below Dar	k Surface (A11)	\Box	Depleted Matrix (F3	3)				
Thick Dark Surface (Redox Dark Surface				³ Indicators of	hydrophytic vegetation and wetland
Sandy Mucky Miner	•		Depleted Dark Surfa					st be present, unless disturbed or
Sandy Gleyed Matri			Redox Depressions				problematic.	•
Restrictive Layer (if pre			·		Hydric Soil Presen	nt?	·	
Туре					Ĩ			✓ Yes ☐ No
Depth (inches)	:							✓ Yes No
Remarks:	<u>'</u>							
HYDROLOGY								
Wetland Hydrology Ind	icators:							
Primary Indicators (min		ed; check all	that apply)				Secondary Ind	icators (2 or more required)
✓ Surface Water (A1)			✓ Water-Stained I	_eaves (B9) (ex	cept MLRA			ined Leaves (B9) (MLRA
✓ High Water Table (A)	\2)		1, 2, 4A, and 4I	В)			1, 2, 4A, a	and 4B)
✓ Saturation (A3)			Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Invertel	brates (B13)				n Water Table (C2)
Sediment Deposits	(B2)		✓ Hydrogen Sulfid	le Odor (C1)				Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos				= '	nic Position (D2)
Algal Mat or Crust (B4)		Presence of Rec					quitard (D3)
Iron Deposits (B5)			Recent Iron Red					ral Test (D5)
Surface Soil Cracks			Stunted or Street		.) (LRR A)			t Mounds (D6) (LRR A)
Inundation Visible o		-	Other (Explain i	n Remarks)			Frost-Hea	ve Hummocks (D7)
Sparsely Vegetated	Concave Surface (B	88)						
Field Observations:	_ ,,		5 .1 (1 .1 .)		and Hydrology Pr	esent?		
Surface Water Present?			Depth (inches):	<u>C</u>				
Water Table Present?	✓ Yes	_	Depth (inches):					✓ Yes No
Saturation Present?	✓ Yes	∐ No	Depth (inches):	С	<u>)</u>			
(includes capillary fringe		ni+ori	Lagrial phatas incard	oue increstion	s) if available:			
Describe Recorded Data	ı (stream gauge, mo	onitoring wel	i, aeriai priotos, previ	ous irispections	s), ii available:			
Remarks:								
Nemarks.								

Project/Site:	Port Gamble Redevelopment	Plan	City/County:	Kitsap County	У	Sampling Date: 11/16/2012
Applicant/Owner:	Pope Resources			State	:: <u>W</u> A	Sampling Point: SP-9
Investigator(s):	J. Dadisman, D. Conlin		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	race, etc.): Hillslope		Local Relief (con	cave, convex, r	none): none	Slope (%): <u>0-2%</u>
Subregion (LLR):	<u>A</u>	Lat:		_ Long	:: Datum:_	
Soil Map Unit Name:	Kitsap silt loam 8-15% slopes			_ N	WI Classification: none	
Are climatic/hydrologic	conditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain i	n Remarks.)
Are	Soil Hydrology	significantly distur	bed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No	
Remarks:						
	scientific names of plants.					
Tree Stratum	solentine names of plants.	Absolute %	Dominant	Indicator	Dominance Test Worksheet:	
		Cover	Species?	Status	Number of dominant Species	
<u>1.</u> 2.					That are OBL, FACW, or FAC:	1 (A)
<i>3.</i>						_ (/.)
4.					Total Number of Dominant	
		0	= Total Cover	-	Species Across All Strata:	1 (B)
Sapling/Shurb Stratum						
1.					Percent of dominant Species	(1.45)
2.					That are OBL, FACW, or FAC:	100 (A/B)
<i>3. 4.</i>				-	Prevalence Index Worksheet:	
<i>5.</i>				-		Multiply by:
J.		0	= Total Cover		OBL Species	x 1 = 0
Herb Stratum	•				· · · · · · · · · · · · · · · · · · ·	x 2 = 0
1. Soft Rush (Juncus effu	ısus)	70	yes	FACW		x 3 = 0
2. Kentucky Bluegrass (I	Poa pratensis)	10	no	FAC	FACU Species	x 4 = 0
3. Creeping Buttercup (F	Ranunculus repens)	5	no	FACW	- · — —	x 5 = 0
4.				-	Column Totals: 0	(A) <u>0</u> (B)
5.				-	Duning language landour	D/A
<i>6. 7.</i>				-	Prevalence Index =	B/A =
8.					Hydrophytic Vegetation Indicat	ors:
9.				-	1 - Rapid Test for Hydrophy	
10.				-	2 - Dominance Test is >50%	
11.					3 - Prevalence Index is ≤3.0	1
Woody Vine Stratum		85	= Total Cover		4 - Morphological Adaptati Remarks or on a separate sh	ons ¹ (provide supporting data in neet.
1.					5 - Wetland Non-Vascular F	Plants ¹
2.					Problem Hydrophytic Vege	tation (Explain)
		0	= Total Cover		¹ Indicators of hydric soil and we	etland hydrology must be present,
% Bare Ground	in Herb Stratum5%				unless disturbed or problemation	
Remarks:					Hydrophytic Vegetation Pres	ent?

Depth	Matri	x	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 2/1	100					loam	
								
¹ Type: C=Concentration	, D=Depletion, RM-	Reduced Ma	trix, CS=Covered or C	oated Sand Gra	ains. ² Location:	PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (Applicable to all LR	Rs, unless o	therwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muc	k (A10)
Histic Epipedon (A2))	H	Stripped Matrix (S6))				it Material (TF2)
Black Histic (A3)	,	П	Loamy Mucky Miner		t MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	.4)	П	Loamy Gleyed Matri		·			olain in Remarks)
Depleted Below Dar	k Surface (A11)	П	Depleted Matrix (F3	3)				
Thick Dark Surface (Redox Dark Surface				³ Indicators of	hydrophytic vegetation and wetland
Sandy Mucky Miner			Depleted Dark Surfa					st be present, unless disturbed or
Sandy Gleyed Matri			Redox Depressions (problematic.	• ,
Restrictive Layer (if pre			·		lydric Soil Presen	it?	·	
Туре								✓ Yes ☐ No
Depth (inches)	:							✓ Yes No
Remarks:								
HYDROLOGY								
Wetland Hydrology Ind	icators:							
Primary Indicators (mini		ed; check all	that apply)				Secondary Ind	icators (2 or more required)
✓ Surface Water (A1)				_eaves (B9) (ex	cept MLRA		☐ Water-Sta	ined Leaves (B9) (MLRA
✓ High Water Table (A)	A2)		1, 2, 4A, and 4E	3)			1, 2, 4A, a	and 4B)
✓ Saturation (A3)			Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Invertel					n Water Table (C2)
Sediment Deposits ((B2)		✓ Hydrogen Sulfid				Saturated	Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos	pheres along Li	iving Roots (C3)		= :	nic Position (D2)
Algal Mat or Crust (B4)		Presence of Red	luction Iron (C4	1)			quitard (D3)
Iron Deposits (B5)			Recent Iron Red					ral Test (D5)
Surface Soil Cracks (Stunted or Stres	-) (LRR A)			t Mounds (D6) (LRR A)
Inundation Visible o		•	Other (Explain in	n Remarks)			Frost-Hea	ve Hummocks (D7)
Sparsely Vegetated	Concave Surface (B	8)						
Field Observations:					and Hydrology Pr	esent?		
Surface Water Present?	=		Depth (inches):	<u> </u>	-			
Water Table Present?	Yes		Depth (inches):	<u> </u>	- I			✓ Yes No
Saturation Present?	✓ Yes	∐ No	Depth (inches):	C	<u>'</u> -			
(includes capillary fringe		mitariae !		0110 imaga = +1 -	o) if overlateler			
Describe Recorded Data	ı (stream gauge, mo	onitoring wel	i, aeriai priotos, previ	ous inspections	s), ii available:			
Remarks:								
nemarks.								

Project/Site:	Port Gamble Redeve	lopment P	Plan	_City/County:	Kitsap Count	У	Sampling Date:11/16/2012
Applicant/Owner:	Pope Resources				State	:: <u>W</u> A	Sampling Point: SP-10
Investigator(s):	J. Dadisman, D. Conli	n .		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	ace, etc.): depr	ession		Local Relief (con	cave, convex, r	none): concave	Slope (%): <u>0-2%</u>
Subregion (LLR):	Α		Lat:		_ Long	:: Datum:	
Soil Map Unit Name:	Kitsap silt loam 8-159	% slopes			_ N	WI Classification: none	
Are climatic/hydrologic o	conditions on the site t	ypical for	this time of year?		✓ Yes	☐ No (if no, explain	in Remarks.)
Are	Soil Hydrol	ogy	significantly distu	rbed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrol	ogy	naturally problem	natic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND				_			
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres		Yes	No No No	Is the sampled a Wetland?	rea within a	☐ Yes ✓ No	
Remarks:							
VEGETATION - Use s	scientific names of	nlants					
Tree Stratum	scientific flames of	piarits.	Absolute %	Dominant	Indicator	Dominance Test Worksheet:	
1		•	Cover	Species?	Status	Number of deminant Chasies	
<u>1.</u> 2.					-	Number of dominant Species That are OBL, FACW, or FAC:	1 (A)
3.			_		-	That are obe, thew, or the	
4.						Total Number of Dominant	
			0	= Total Cover		Species Across All Strata:	1 (B)
Sapling/Shurb Stratum		_		_			
1.						Percent of dominant Species	
2.						That are OBL, FACW, or FAC:	100 (A/B)
3.					_	Duranda a a la des Madela a atr	
<i>4. 5.</i>					- ·	Prevalence Index Worksheet:	Multiply by
5.			0	= Total Cover	-	Total % Cover of: OBL Species	Multiply by: x 1 = 0
Herb Stratum		_	0	Total cover		FACW Species	x 2 = 0
1. Colonial Bentgrass (A	arostis capillaris)		60	yes	FAC	FAC Species	x 3 = 0
2. Velvetgrass (Holcus la			10	no	FAC	FACU Species	x 4 = 0
3. Creeping Buttercup (R			5	no	FACW	UPL Species	x 5 = 0
4. Curled Dock (Rumex c	rispus)	'	10	no	FAC	Column Totals: 0	(A) 0 (B)
5. Other grazed grasses			20	no			
6.					-,	Prevalence Index :	= B/A =
7. 8.							.
9.					-	Hydrophytic Vegetation Indica 1 - Rapid Test for Hydroph	
10.						2 - Dominance Test is >509	
11.					-	3 - Prevalence Index is ≤3.0	
		_	105	= Total Cover	-	4 - Morphological Adaptat	ions ¹ (provide supporting data in
Woody Vine Stratum						Remarks or on a separate s	
1.			_		-,	5 - Wetland Non-Vascular	
2.				= Total Cover		Problem Hydrophytic Vege	etation (Explain)
% Bare Ground	in Herb Stratum	0%	0	– TOTAL COVER		¹ Indicators of hydric soil and wunless disturbed or problemat	retland hydrology must be present, ic.
Remarks:						Hydrophytic Vegetation Pre	sent?
						-	

Depth	Matri	x	Redox Features					·
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-12	10YR 3/3	100	Color (moist)	70	Турс	LOC	loam	Kemarks
0 12			-		_			
								
	· · · · · · · · · · · · · · · · · · ·				-1			
					-			
	-							
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Ma	trix, CS=Covered or (Coated Sand Gra	ins. ² Location:	PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (A								Problematic Hydric Soils ³ :
□ 11:-4:1 (A4)			C				a N4	(440)
Histisol (A1)		님	Sandy Redox (S5)	-1			2 cm Mucl	
Histic Epipedon (A2)		님	Stripped Matrix (S6					t Material (TF2)
Black Histic (A3)	4)	님	Loamy Mucky Mine		: IVILRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A		님	Loamy Gleyed Mat				U Other (Exp	olain in Remarks)
Depleted Below Dar		님	Depleted Matrix (F.				S	
Thick Dark Surface (•	님	Redox Dark Surface					hydrophytic vegetation and wetland
Sandy Mucky Miner		H	Depleted Dark Surf					st be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions				problematic.	
Restrictive Layer (if pres				Н	lydric Soil Presen	it?		
Type:								Yes V No
Depth (inches):								
Remarks:								
HYDROLOGY								
Wetland Hydrology Ind								
Primary Indicators (mini	mum of one requir	ed; check all	that apply)				Secondary Ind	icators (2 or more required)
Surface Water (A1)				Leaves (B9) (ex	cept MLRA			ined Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4	-			1, 2, 4A, a	
Saturation (A3)			Salt Crust (B11					Patterns (B10)
Water Marks (B1)	5.01		Aquatic Inverte					n Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfi					Visible on Aerial Imagery (C9)
Drift Deposits (B3)			=	spheres along Li				nic Position (D2)
Algal Mat or Crust (I	34)			duction Iron (C4				quitard (D3)
Iron Deposits (B5)	D. C.)		=	duction Tilled So	. ,			ral Test (D5)
Surface Soil Cracks (•	- \	=	essed Plants (D1) (LRR A)			t Mounds (D6) (LRR A)
Inundation Visible o			U Other (Explain	in Remarks)			☐ Frost-Heav	ve Hummocks (D7)
Sparsely Vegetated	Concave Surface (B	8)						
Field Observations:			5 11 (* 1)	Wetla	and Hydrology Pr I	esent?		
Surface Water Present?	Yes	V No	Depth (inches):		-			
Water Table Present?	∐ Yes	✓ No	Depth (inches):		=			Yes V No
Saturation Present?	∖ Yes	✓ No	Depth (inches):		=			
(includes capillary fringe		nitoring wol	l agriclabates area	ious inspostions) if available			
Describe Recorded Data	(stream gauge, mc	mitoring wei	i, aeriai photos, prev	ious irispections	oj, ii available:			
Remarks:								
nemarks.								

Project/Site:	Port Gamble Redevelopment	Plan	City/County:	Kitsap County	У	Sampling Date: 11/19/2012
Applicant/Owner:	Pope Resources			State	: <u>W</u> A	Sampling Point: SP-11
Investigator(s):	J. Dadisman, D. Conlin		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	race, etc.): Hillslope		Local Relief (con	cave, convex, r	none): <u>concave</u>	Slope (%): <u>0-2%</u>
Subregion (LLR):	<u>A</u>	Lat:		_ Long	: Datum:_	
Soil Map Unit Name:	Kitsap silt loam 8-15% slopes			_ N	WI Classification: none	
Are climatic/hydrologic	conditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain	in Remarks.)
Are	Soil Hydrology	significantly distur	bed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No	
Remarks:						
	scientific names of plants.					
Tree Stratum_	·	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1.		Cover	эрсегсэ:	Status	Number of dominant Species	
2.					That are OBL, FACW, or FAC:	1 (A)
3.						
4.					Total Number of Dominant	
G 1: /GL 1 G		0	= Total Cover		Species Across All Strata:	1 (B)
Sapling/Shurb Stratum					Percent of dominant Species	
<u>1.</u> 2.					That are OBL, FACW, or FAC:	100 (A/B)
3.				-	That are obe, thew, of the	133 (1,1,5)
4.					Prevalence Index Worksheet:	
5.					Total % Cover of:	Multiply by:
		0	= Total Cover		OBL Species	x 1 =0
Herb Stratum		0.0			FACW Species	x 2 = 0
 Soft Rush (Juncus effu Colonial Bentgrass (A 		<u>80</u> 5	yes	FACW	FAC Species	x 3 = 0
3.	grostis capillaris)		no	FAC	FACU Species UPL Species	x = 4 = 0 x = 5 = 0
4.				· ·	Column Totals: 0	$\begin{array}{c c} A & C \\ \hline (A) & O \\ \hline \end{array} $ (B)
5.				-	1	
6.					Prevalence Index =	= B/A =
7.]	
8.					Hydrophytic Vegetation Indicat	
9.				- 1	1 - Rapid Test for Hydrophy	
10. 11.				-	2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0	
11.			T-t-LC	-	_	
Woody Vine Stratum	•	85	= Total Cover		Remarks or on a separate s	
1. 2.					5 - Wetland Non-Vascular I Problem Hydrophytic Vege	
۲.		0	= Total Cover	-	7.	
% Bare Ground	in Herb Stratum0%		- Total Covel		¹ Indicators of hydric soil and w unless disturbed or problemati	etland hydrology must be present, c.
Remarks:					Hydrophytic Vegetation Pres	sent?
					!	

Depth	Matri	x	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-7	10YR 3/2	100					loam	
7-16	10YR 2/1	95	10YR 3/3	5	С	М	loam	
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Matr	ix, CS=Covered or C	oated Sand G	rains. ² Location:	PL=Pore Linin	ng, M=Matrix	
Hydric Soil Indicators: (A	pplicable to all LR	Rs, unless oth	erwise noted.)				Indicators for I	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muck	: (A10)
Histic Epipedon (A2)			Stripped Matrix (S6)				t Material (TF2)
Black Histic (A3)			Loamy Mucky Mine	•	ot MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A4)		, Loamy Gleyed Matr		•			lain in Remarks)
Depleted Below Dark		=	 Depleted Matrix (F3					,
Thick Dark Surface (A			Redox Dark Surface	•			³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Minera	•		Depleted Dark Surfa	• •				t be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions				problematic.	• •
Restrictive Layer (if prese			'		Hydric Soil Presen	t?		
Type:	·				ĺ			□ Vaa □ Na
Depth (inches):								✓ Yes No
Remarks:								
HYDROLOGY								
Wetland Hydrology India	ators.							
Primary Indicators (minin		ed: check all th	nat apply)				Secondary Indi	cators (2 or more required)
,		,					,	cases (= e. mere requires,
Surface Water (A1)			Water-Stained	Leaves (B9) (e	xcept MLRA		☐ Water-Stai	ned Leaves (B9) (MLRA
High Water Table (A2	2)		1, 2, 4A, and 4		•		1, 2, 4A, a	
Saturation (A3)	•		Salt Crust (B11)					atterns (B10)
Water Marks (B1)			Aquatic Inverte	brates (B13)			Dry-Seasor	Water Table (C2)
Sediment Deposits (B	32)		Hydrogen Sulfic					Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos	pheres along	Living Roots (C3)		Geomorph	ic Position (D2)
Algal Mat or Crust (B	4)		Presence of Rec	duction Iron (C	C4)		Shallow Ac	juitard (D3)
☐ Iron Deposits (B5)			Recent Iron Rec	duction Tilled S	Soils (C6)		FAC-Neutr	al Test (D5)
Surface Soil Cracks (B	66)		Stunted or Stre	ssed Plants (D	1) (LRR A)		Raised Ant	Mounds (D6) (LRR A)
Inundation Visible on	Aerial Imagery (B	7)	🔲 Other (Explain i	n Remarks)			Frost-Heav	e Hummocks (D7)
Sparsely Vegetated C	oncave Surface (B	8)						
Field Observations:				Wet	land Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No I	Depth (inches):					_
Water Table Present?	✓ Yes	☐ No □	Depth (inches):		0			✓ Yes No
Caturatian Drasant?	✓ Yes	No I	Depth (inches):		0			
Saturation Present?								
(includes capillary fringe)								
	stream gauge, mo	onitoring well,	aerial photos, previ	ious inspection	ns), if available:			
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	onitoring well,	aerial photos, previ	ious inspection	ns), if available:			
(includes capillary fringe)	stream gauge, mo	onitoring well,	aerial photos, previ	ious inspection	ns), if available:			

Project/Site:	Port Gamble Redevelopme	nt Plan	City/County:	Kitsap Count	У	Sampling Date: 11/19/2012
Applicant/Owner:	Pope Resources			State	e: WA	Sampling Point: SP-12
Investigator(s):	J. Dadisman, D. Conlin		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	ace, etc.): Hillslope		Local Relief (con	icave, convex, r	none): none	Slope (%): <u>2-4%</u>
Subregion (LLR):	Α	Lat:		Long	g: Datum:_	
Soil Map Unit Name:	Kitsap silt loam 8-15% slope	25		_ N	IWI Classification: none	
Are climatic/hydrologic of	conditions on the site typical	for this time of year?		✓ Yes	☐ No (if no, explain i	in Remarks.)
Are Vegetation	Soil Hydrology	significantly distu	rbed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally problem	natic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND	INGS					
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	Yes	No No No No	Is the sampled a Wetland?	rea within a	☐ Yes ✓ No	
Remarks:						
	scientific names of plan	te				
Tree Stratum	scientific flames of plan	Absolute %	Dominant	Indicator	Dominance Test Worksheet:	
		Cover	Species?	Status	_	
<u>1.</u> 2.				_	Number of dominant Species That are OBL, FACW, or FAC:	2 (A)
3.		<u> </u>		_	That are obt, thew, of the.	2 (^)
4.				-	Total Number of Dominant	
		0	= Total Cover	_	Species Across All Strata:	2 (B)
Sapling/Shurb Stratum			_			
1.			·		Percent of dominant Species	
2.					That are OBL, FACW, or FAC:	100 (A/B)
3.		_				
4.		 ,		<u> </u>	Prevalence Index Worksheet:	Navilate I. de
5.		0	= Total Cover		Total % Cover of: OBL Species	Multiply by: x 1 = 0
Herb Stratum			TOTAL COVEL			$\mathbf{x} = \frac{\mathbf{x} - \mathbf{y}}{\mathbf{x} - \mathbf{y}}$
1. Common Plantain (Pl	antago maior)	15	yes	FAC		x 3 = 0
2. Colonial Bentgrass (A		40	yes	FAC		x 4 = 0
3. Orchardgrass (Dactyl		10	no	FACU	UPL Species	x 5 = 0
4. Unidentifiable grasse	S	35	no		Column Totals: 0	(A) 0 (B)
5.						
6.					Prevalence Index =	: B/A =
7. 8.				<u> </u>		
9.				_	Hydrophytic Vegetation Indicat 1 - Rapid Test for Hydrophy	
10.					2 - Dominance Test is >50%	
11.				_	3 - Prevalence Index is ≤3.0	
		100	= Total Cover	·	4 - Morphological Adaptati	ons ¹ (provide supporting data in
Woody Vine Stratum					Remarks or on a separate sh	
1. 2.				-	5 - Wetland Non-Vascular F Problem Hydrophytic Vege	
۲۰			= Total Cover	-	7.	
% Bare Ground	in Herb Stratum0	<u> </u>	- 10181 60461		¹ Indicators of hydric soil and we unless disturbed or problemation	etland hydrology must be present, c.
Remarks:					 Hydrophytic Vegetation Pres	ent?

Depth	Matr	ix	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/1	100					loam	
			<u> </u>					
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Ma	trix, CS=Covered or Co	oated Sand Gr	ains. ² Location:	PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (A	Applicable to all LF	RRs, unless o	therwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Mucl	k (A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6)					t Material (TF2)
Black Histic (A3)		H	Loamy Mucky Miner		t MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	4)	一	Loamy Gleyed Matri		•			olain in Remarks)
Depleted Below Dark		一	Depleted Matrix (F3					,
Thick Dark Surface (Ħ	Redox Dark Surface				³ Indicators of I	hydrophytic vegetation and wetland
Sandy Mucky Minera	•	П	Depleted Dark Surfa	. ,				st be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions (problematic.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Restrictive Layer (if pres					Hydric Soil Presen	t?	<u> </u>	
Type:					ĺ			□ v □ N.
Depth (inches):								Yes V No
Remarks:					<u>l</u>			
Remarks.								
HYDROLOGY								
Wetland Hydrology Indi	cators:							
Primary Indicators (mini		red: check all	that annly)				Secondary Ind	icators (2 or more required)
I milary maleutors (milar	man or one requi	ca, criccit an	that apply)				Secondary ma	reators (2 or more required)
Surface Water (A1)			☐ Water-Stained L	eaves (B9) (ex	cept MLRA		☐ Water-Sta	ined Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4E				1, 2, 4A, a	
Saturation (A3)	-,		Salt Crust (B11)	-,				Patterns (B10)
Water Marks (B1)			Aquatic Inverteb	orates (B13)				n Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfid					Visible on Aerial Imagery (C9)
Drift Deposits (B3)	,		Oxidized Rhizos		iving Roots (C3)			nic Position (D2)
Algal Mat or Crust (E	34)		Presence of Red	_			=	quitard (D3)
Iron Deposits (B5)	,		Recent Iron Red					ral Test (D5)
Surface Soil Cracks (B6)		Stunted or Stres				=	t Mounds (D6) (LRR A)
Inundation Visible or	•	37)	Other (Explain in		,,			ve Hummocks (D7)
Sparsely Vegetated (-		,			_	,
Field Observations:		,		Wetl	and Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):]			
Water Table Present?	✓ Yes	□ No	Depth (inches):	13	3			Yes V No
Saturation Present?	Yes		Depth (inches):		0			
(includes capillary fringe)							
Describe Recorded Data		onitoring wel	l, aerial photos, previo	ous inspection	s), if available:			
			<u> </u>					
Remarks:								

Project/Site:	Port Gamble Redevelopment I	Plan	City/County:	Kitsap County	У	Sampling Date: 11/19/2012
Applicant/Owner:	Pope Resources			State	:: <u>W</u> A	Sampling Point: SP-13
Investigator(s):	J. Dadisman, D. Conlin		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	ace, etc.): Hillslope		Local Relief (con	cave, convex, r	none): <u>concave</u>	Slope (%): <u>1-3%</u>
Subregion (LLR):	Α	Lat:		Long	: Datum: _	
Soil Map Unit Name:	Kitsap silt loam 8-15% slopes			N	WI Classification: none	
Are climatic/hydrologic of	conditions on the site typical for	this time of year?		✓ Yes	No (if no, explain	in Remarks.)
Are Vegetation	Soil Hydrology	significantly distur	bed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No	
Remarks:						
	scientific names of plants.					
Tree Stratum	р	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1.		Cover	3pecies:	Status	Number of dominant Species	
2.					That are OBL, FACW, or FAC:	1 (A)
3.	_					
4.				-	Total Number of Dominant	
		0	= Total Cover	-	Species Across All Strata:	1 (B)
Sapling/Shurb Stratum			•			
1.			_	-	Percent of dominant Species	
2.					That are OBL, FACW, or FAC:	100 (A/B)
3.					Duran la des Manhabasto	
<i>4. 5.</i>				- ·	Prevalence Index Worksheet:	Multiply by
5.		0	= Total Cover	-	Total % Cover of: OBL Species	Multiply by: x 1 = 0
Herb Stratum	-	0	- Total Cover		FACW Species	$\mathbf{x} = \frac{0}{0}$
1. Soft Rush (Juncus effu	ısus)	60	yes	FACW	FAC Species	x 3 = 0
2. Colonial Bentgrass (A		20	no	FAC	FACU Species	x 4 = 0
3. Creeping Buttercup (F		20	no	FACW	UPL Species	x 5 = 0
4. Kentucky Bluegrass (F		20	no	FAC	Column Totals: 0	(A) 0 (B)
5. Other grazed grasses		30	no	-	_	
6.					Prevalence Index =	= B/A =
7. 8.					Hudrophytic Vogetation Incline	rorc:
9.				-	Hydrophytic Vegetation Indicat 1 - Rapid Test for Hydrophy	
10.					2 - Dominance Test is >50%	
11.				-	3 - Prevalence Index is ≤3.0	
		150	= Total Cover		4 - Morphological Adaptati	ons ¹ (provide supporting data in
Woody Vine Stratum					Remarks or on a separate s	
1.					5 - Wetland Non-Vascular I	
2.		0	= Total Cover	-	Problem Hydrophytic Vege	
% Bare Ground	in Herb Stratum0%		- Total Covel		¹ Indicators of hydric soil and w unless disturbed or problemati	etland hydrology must be present, c.
Remarks:					Hydrophytic Vegetation Pres	sent?
					-	

Depth	Matri	Х	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-7	10YR 2/2	100					loam	
7-16	10YR 4/2	90	10YR 3/4	10	с	M	loam	
	· · =							
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Mat	rix, CS=Covered or C	Coated Sand G	irains. ² Location:	PL=Pore Linir	ng, M=Matrix	
Hydric Soil Indicators: (A	Applicable to all LR	Rs, unless ot	herwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muc	k (A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6))				t Material (TF2)
Black Histic (A3)		H	Loamy Mucky Mine	•	pt MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A4	1)	Ħ	Loamy Gleyed Matr		,			olain in Remarks)
Depleted Below Dark		Ħ	Depleted Matrix (F3					,
Thick Dark Surface (A	` '	Ħ	Redox Dark Surface				³ Indicators of	hydrophytic vegetation and wetland
Sandy Mucky Minera	•	Ħ	Depleted Dark Surfa	` '				st be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions				problematic.	,
Restrictive Layer (if pres			'	,	Hydric Soil Presen	t?	•	
Type:	•				ĺ			□ Vaa □ Na
Depth (inches):								✓ Yes No
Remarks:					I			
HYDROLOGY								
Wetland Hydrology Indi	cators:							
Primary Indicators (minir		ed: check all	that apply)				Secondary Ind	icators (2 or more required)
		,					,	
Surface Water (A1)			Water-Stained I	Leaves (B9) (e	except MLRA		☐ Water-Sta	ined Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4I		•		1, 2, 4A, a	
Saturation (A3)	•		Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Inverte	brates (B13)			Dry-Seaso	n Water Table (C2)
Sediment Deposits (32)		Hydrogen Sulfic					Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos	pheres along	Living Roots (C3)		Geomorpl	nic Position (D2)
Algal Mat or Crust (B	34)		Presence of Rec	duction Iron (C4)		Shallow A	quitard (D3)
☐ Iron Deposits (B5)			Recent Iron Red	duction Tilled	Soils (C6)		FAC-Neuti	ral Test (D5)
Surface Soil Cracks (E	36)		Stunted or Stre	ssed Plants (D	01) (LRR A)		Raised An	t Mounds (D6) (LRR A)
Inundation Visible or	n Aerial Imagery (B	57)	Other (Explain i	n Remarks)			Frost-Hea	ve Hummocks (D7)
Sparsely Vegetated (Concave Surface (B	8)						
Field Observations:				Wet	tland Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):					_
Water Table Present?	Yes	✓ No	Depth (inches):					✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):		0			
(includes capillary fringe)								
Describe Recorded Data	(stream gauge, mo	onitoring well	, aerial photos, previ	ious inspectio	ns), if available:			
Remarks:								
I								

Project/Site:	Port Gamble Redevelopment I	Plan	City/County:	Kitsap Count	У	Sampling Date:	1/16/2008
Applicant/Owner:	Pope Resources			_ State	e: <u>W</u> A	Sampling Point: <u>S</u>	P-14
Investigator(s):	G. Allington and M. Simmons		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E		
Landform (hillslope, terr	ace, etc.): Hillslope		Local Relief (con	icave, convex, r	none): <u>concave</u>	Slope (%): <u>0</u>	-2%
Subregion (LLR):	Α	Lat:		Long	g: Datum:		
Soil Map Unit Name:	Poulsbo gravelly sandy loam 1	5-30% slopes		_ N	IWI Classification: none		
Are climatic/hydrologic of	conditions on the site typical for	this time of year?		✓ Yes	No (if no, explain in F	Remarks.)	
Are Vegetation	Soil Hydrology	significantly distur	rbed?	Are "normal	circumstances" present?	✓ Yes No	
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FIND	INGS						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No		
Remarks:							
	scientific names of plants.						
	scientific flames of plants.	Absolute %	Dominant	Indicator	Daminana Tast Wallahasti		
<u>Tree Stratum</u>		Cover	Species?	Status	Dominance Test Worksheet:		
1. Red Alder (Alnus rubr	ra)	30	yes	FAC	Number of dominant Species		
2.				_	That are OBL, FACW, or FAC:	3	(A)
<i>3. 4.</i>					Total Number of Dominant		
4.	_	30	= Total Cover	_	Species Across All Strata:	4	(D)
Sapling/Shurb Stratum		30	- Total Cover		Species Across All Strata.	4	(B)
1. Himalayan Blackberry	v (Ruhus armeniacus)	10	yes	FACU	Percent of dominant Species		
2.	(madas armemacas)		763	17100	That are OBL, FACW, or FAC:	75	(A/B)
3.	_			_	_		(- 7 - 7
4.					Prevalence Index Worksheet:		
5.					Total % Cover of: M	ultiply by:	
		10	= Total Cover	_	OBL Species x :	1 = 0	
<u>Herb Stratum</u>					· —	2 = 0	
1. Soft Rush (Juncus effu		75	yes	FACW		3 = 0	
2. Creeping Buttercup (F		5	no	FACW		4 = 0	
3. Velvetgrass (Holcus Id	anatus)	20	yes	FAC		5 = 0	(D)
<i>4.</i> <i>5.</i>				<u>.</u>	Column Totals:0 (A		(B)
6.				_	Prevalence Index = B	/A =	
7.				-	1		
8.					Hydrophytic Vegetation Indicators	S:	
9.					1 - Rapid Test for Hydrophytic	: Vegetation	
10.					2 - Dominance Test is >50%		
11.					3 - Prevalence Index is $\leq 3.0^1$		
Woody Vine Stratum	-	100	= Total Cover		4 - Morphological Adaptation Remarks or on a separate shee		ata in
1.				_	5 - Wetland Non-Vascular Plan		
2.		0	= Total Cover	-0	Problem Hydrophytic Vegetat		
% Bare Ground	in Herb Stratum0%		– rotal cover		¹ Indicators of hydric soil and wetla unless disturbed or problematic.	and hydrology must be p	resent,
Remarks:					Hydrophytic Vegetation Presen	t? ✓ Yes 🗌 I	No

Depth	Matri	х	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 3/1	100					silt loam	
4-16	2.5Y 4/1	95	10YR 5/6	5		М	loam	
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Mat	rix, CS=Covered or C	oated Sand G	irains. ² Location:	PL=Pore Linir	ng, M=Matrix	
Hydric Soil Indicators: (A	Applicable to all LR	Rs, unless ot	herwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Mucl	k (A10)
Histic Epipedon (A2)		Ħ	Stripped Matrix (S6)				t Material (TF2)
Black Histic (A3)		Ħ	Loamy Mucky Mine	•	pt MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	4)	一	Loamy Gleyed Matr				Other (Exp	olain in Remarks)
Depleted Below Darl	k Surface (A11)		Depleted Matrix (F3	3)			_	
Thick Dark Surface (A	• •		Redox Dark Surface				³ Indicators of I	hydrophytic vegetation and wetland
Sandy Mucky Minera	•		Depleted Dark Surfa	ace (F7)			hydrology mus	st be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pres					Hydric Soil Presen	t?		
Туре:								✓ Yes No
Depth (inches):								V 163 NO
HYDROLOGY Wetland Hydrology Indi	cators:							
Primary Indicators (mini		ed; check all	that apply)				Secondary Ind	icators (2 or more required)
Surface Water (A1)			Water-Stained I	Leaves (B9) (e	except MLRA		☐ Water-Sta	ined Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4I				1, 2, 4A, a	
Saturation (A3)	•		Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Inverte					n Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfic	de Odor (C1)			Saturated	Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos	pheres along	Living Roots (C3)		Geomorph	nic Position (D2)
Algal Mat or Crust (E	34)		Presence of Rec	duction Iron (C4)		Shallow A	quitard (D3)
Iron Deposits (B5)			Recent Iron Red				FAC-Neutr	al Test (D5)
Surface Soil Cracks (I	•		Stunted or Street	ssed Plants (D	01) (LRR A)			t Mounds (D6) (LRR A)
Inundation Visible or	n Aerial Imagery (B	57)	Other (Explain i	n Remarks)			Frost-Heav	ve Hummocks (D7)
Sparsely Vegetated (Concave Surface (B	8)						
Field Observations:				Wet	tland Hydrology Pr	esent?		
Surface Water Present?	☐ Yes	☑ No	Depth (inches):					
Water Table Present?	✓ Yes	∐ No	Depth (inches):		7			✓ Yes No
Saturation Present?	✓ Yes	∐ No	Depth (inches):		1			
(includes capillary fringe		udhaulu II	andal abote to the					
Describe Recorded Data	(stream gauge, mo	onitoring well	, aeriai pnotos, previ	ious inspectio	ns), it available:			
Remarks:								
Nelliai KS.								

Project/Site:	Port Gamble Redevelopment I	Plan	City/County:	Kitsap Count	У	Sampling Date:	1/23/2008
Applicant/Owner:	Pope Resources			State	e: <u>W</u> A	Sampling Point: <u>SP</u>	-15
Investigator(s):	G. Allington and M. Simmons		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E		
Landform (hillslope, terr	ace, etc.): depression		Local Relief (con	cave, convex, r	none): <u>concave</u>	Slope (%): <u>0-</u> 2	2%
Subregion (LLR):	<u>A</u>	Lat:		_ Long	g: Datum:		
Soil Map Unit Name:	Poulsbo gravelly sandy loam, 1	15-30% slopes		_ N	IWI Classification: none		
Are climatic/hydrologic of	conditions on the site typical for	this time of year?		✓ Yes	No (if no, explain in	Remarks.)	
Are Vegetation	Soil Hydrology	significantly distur	rbed?	Are "normal	circumstances" present?	✓ Yes No	
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FIND	INGS						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No		
Remarks:							
	scientific names of plants.						
Tree Stratum	Promote Promote	Absolute %	Dominant	Indicator	Dominance Test Worksheet:		
		Cover	Species?	Status	_		
1. Red Alder (Alnus rubr	ra)	75	yes	FAC	Number of dominant Species	2	(4)
2. 3.				-	That are OBL, FACW, or FAC:	3	(A)
4.					Total Number of Dominant		
		75	= Total Cover		Species Across All Strata:	3	(B)
Sapling/Shurb Stratum	•		•		_		()
1. Salmonberry (Rubus s	spectabilis)	25	yes	FAC	Percent of dominant Species		
2.					That are OBL, FACW, or FAC:	100	(A/B)
3.							
4.				-	Prevalence Index Worksheet:		
5.						Multiply by:	
		25	= Total Cover			(1 = 0	
Herb Stratum	a harrantari	00		ODI		(2 = 0	
1. Slough Sedge (Carex of 2. Lady Fern (Athyrium)		80 10	yes no	OBL FAC		(3 = 0 0 0	
3.	тих-јеттиј		110	FAC		(4 = <u>0</u> (5 = 0	
4.				-		(A) 0	(B)
5.				-			(-)
6.					Prevalence Index = I	3/A =	
7.							
8.				-	Hydrophytic Vegetation Indicato		
9.					1 - Rapid Test for Hydrophyt	ic Vegetation	
10.					2 - Dominance Test is >50%		
11.					3 - Prevalence Index is ≤3.0 ¹		
Woody Vine Stratum	-	90	= Total Cover		4 - Morphological Adaptatio Remarks or on a separate she	eet.	a in
1. 2.				-	5 - Wetland Non-Vascular Pl Problem Hydrophytic Vegeta		
۲۰		0	= Total Cover		7.		
% Bare Ground	in Herb Stratum0%		- 10141 00461		¹ Indicators of hydric soil and wet unless disturbed or problematic.		esent,
Remarks:					Hydrophytic Vegetation Prese	ent?	0
					•		

Depth	Matri	Х	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 2-2.5/1	100					silt	
10-16	10YR 3/1	100					silt	
					_			
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Ma	trix, CS=Covered or Co	oated Sand Gr	ains. ² Location:	PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (A	Applicable to all LR	Rs, unless of	therwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muc	k (A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6)					nt Material (TF2)
Black Histic (A3)		П	Loamy Mucky Miner		t MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A4	1)	П	Loamy Gleyed Matri		•		Other (Exp	plain in Remarks)
Depleted Below Dark	Surface (A11)		Depleted Matrix (F3))			_	
Thick Dark Surface (A			Redox Dark Surface				³ Indicators of	hydrophytic vegetation and wetland
Sandy Mucky Minera	•		Depleted Dark Surfa	. ,			hydrology mu:	st be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions (problematic.	
Restrictive Layer (if pres					Hydric Soil Presen	t?	·	
Type:								Voc. No.
Depth (inches):								✓ Yes No
Remarks:			<u> </u>					
HYDROLOGY								
Wetland Hydrology Indi	cators:							
Primary Indicators (minir		ed; check all	that apply)				Secondary Ind	licators (2 or more required)
, , , , ,	•	,	11 //				,	,
Surface Water (A1)			Water-Stained L	eaves (B9) (ex	cept MLRA		☐ Water-Sta	nined Leaves (B9) (MLRA
High Water Table (A.	2)		1, 2, 4A, and 4B		•		1, 2, 4A, a	
Saturation (A3)			Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Inverteb	orates (B13)			Dry-Seaso	n Water Table (C2)
Sediment Deposits (32)		Hydrogen Sulfid					Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizosp	heres along L	iving Roots (C3)		Geomorpl	hic Position (D2)
Algal Mat or Crust (B	34)		Presence of Red	uction Iron (C	4)		Shallow A	quitard (D3)
Iron Deposits (B5)			Recent Iron Red				FAC-Neuti	ral Test (D5)
Surface Soil Cracks (E	36)		Stunted or Stres	sed Plants (D1	L) (LRR A)		Raised An	t Mounds (D6) (LRR A)
Inundation Visible or	n Aerial Imagery (B	7)	Other (Explain in	n Remarks)			Frost-Hea	ve Hummocks (D7)
Sparsely Vegetated C	Concave Surface (B	8)						
Field Observations:				Wetl	and Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):					_
Water Table Present?	✓ Yes	☐ No	Depth (inches):	3-4	4			✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):	(0			
(includes capillary fringe)								
Describe Recorded Data	(stream gauge, mo	nitoring wel	l, aerial photos, previo	ous inspection	s), if available:			
Remarks:								
I								

Project/Site:	Port Gamble R	edevelopme	ent Plan	City/County:	Kitsap County	у	_	Samp	oling Date:	1/23/2008
Applicant/Owner:	Pope Resource	es .			State	e: <u>W</u> A	_	Sampl	ling Point: SP-	-16
Investigator(s):	G. Allington an	ıd M. Simmo	ons	_ Section/Townsh	ip/Range:	Sec 7 Town 27N	l Range 2E			
Landform (hillslope, terra	ace, etc.):	Hillslope		_ Local Relief (con	icave, convex, r	none):	concave	:	Slope (%): <u>0-2</u>	2%
Subregion (LLR):	Α		Lat	:	_ Long	;;	_ Datum: _			
Soil Map Unit Name:	Poulsbo gravel	ly sandy loa	m		_ N	IWI Classification:	none			
Are climatic/hydrologic c	conditions on the	e site typical	for this time of year	?	✓ Yes	☐ No	(if no, explain	in Remarks.)		
Are Vegetation	Soil	Hydrology	significantly dist	urbed?	Are "normal	circumstances" pı	resent?	✓ ·	Yes No	
Are Vegetation	Soil	Hydrology	naturally proble	matic?	(if needed, ex	xplain any answer	rs in Remarks.)			
SUMMARY OF FIND	INGS									
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Prese		Yes Yes Yes	✓ No ✓ No ✓ No	Is the sampled a Wetland?	rea within a	Yes V	No			
Remarks:										
VEGETATION - Use s	scientific nam	es of plar	nts.							
Tree Stratum		-	Absolute %	Dominant	Indicator	Dominance Tes	t Worksheet:			
1. Red Alder (Alnus rubro	a)		Cover 30	Species? yes	Status FAC	Number of dom	ninant Snecies			
2. Douglas Fir (Pseudots	•			yes	FACU	That are OBL, F	•		1	(A)
3.	, , , , , , , , , , , , , , , , , , ,				_	1	,			
4.					_	Total Number o	of Dominant			
			105	_ = Total Cover		Species Acr	ross All Strata:		3	(B)
Sapling/Shurb Stratum						5				
<u>1.</u> 2.				_		Percent of dom That are OBL, F		22.22	333333	(A/B)
<i>3.</i>							ACW, OF TAC.		33333	(A/D)
4.						Prevalence Inde	ex Worksheet:			
5.						Total % C		Multiply by:		
			0	= Total Cover	_	OBL Species		x 1 =	0	
Herb Stratum						FACW Species		x 2 =	0	
1. Sword Fern (Polystich	um munitum)		20	yes	FACU	FAC Species		x 3 =	90	
2. 3.				_	_	FACU Species UPL Species	95	x 4 =	380 0	
4.						Column Totals:	125	(A)	470	(B)
5.										(=)
6.						Pre	evalence Index =	B/A =	3.76	
7.										
8.					_	Hydrophytic Ve	~			
9.				_	_		est for Hydrophy			
10. 11.					-	_	nce Test is >50% nce Index is ≤3.0			
11.				Tatal Carra	_					_ •
Woody Vine Stratum			20	= Total Cover		_	logical Adaptati on a separate sl		apporting data	a III
<u> </u>							l Non-Vascular I			
1. 2.					-		drophytic Vege			
			0	= Total Cover	_	₹.				
2/ 5	to the to	_		_		¹ Indicators of h			y must be pre	esent,
% Bare Ground	ın Herb Stratum	5	<u>0%</u>			unless disturbed	d or problemati	C.		
Remarks:						Hydrophytic '	Vegetation Pres	ent?	Yes 🗸 No)
						-				

Depth	Matri	ix	Redox Features					·
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 3/3	100	color (moist)	70	Турс	Loc	sandy loam	Remarks
4-16	10YR 4/6	100					sandy loam	
7 10		100					Sundy Iouni	
							-	
	-		·					
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Ma	trix. CS=Covered or C	oated Sand Gra	ins. ² Location:	PL=Pore Linin	g. M=Matrix	
Hydric Soil Indicators: (A	•		·					roblematic Hydric Soils ³ :
inyunc 3011 maicators. (A	Applicable to all Liv	ins, uniess o	illei wise flotea.j				ilidicators for F	Toblematic Hyuric 30iis .
Histisol (A1)			Sandy Redox (S5)				2 cm Muck	(A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6))				Material (TF2)
Black Histic (A3)		H	Loamy Mucky Mine		MLRA 1)			w Dard Surface (TF12)
Hydrogen Sulfide (A	4)	H	Loamy Gleyed Matr		- /			ain in Remarks)
Depleted Below Dar		H	Depleted Matrix (F3					,
Thick Dark Surface (П	Redox Dark Surface				³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Miner	•	П	Depleted Dark Surfa	· •				be present, unless disturbed or
Sandy Gleyed Matrix		П	Redox Depressions				problematic.	, ,
Restrictive Layer (if pres					ydric Soil Presen	t?	<u> </u>	
Type:]			□ Voc. □ No
Depth (inches):								Yes ✓ No
Remarks:								
LIVEROLOCY								
HYDROLOGY								
Wetland Hydrology Indi Primary Indicators (mini		ed: check all	that annly)				Secondary India	cators (2 or more required)
I i i i i i i i i i i i i i i i i i i i	indin or one requir	eu, check an	шас арргуу				Secondary maic	ators (2 or more required)
Surface Water (A1)			Water-Stained I	eaves (B9) (exc	ent MIRA		☐ Water-Stair	ned Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4l		cpt minut		1, 2, 4A, ar	
Saturation (A3)	-,		Salt Crust (B11)					atterns (B10)
Water Marks (B1)			Aquatic Inverte					Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfic					/isible on Aerial Imagery (C9)
Drift Deposits (B3)	,		Oxidized Rhizos		ving Roots (C3)		=	c Position (D2)
Algal Mat or Crust (E	34)		Presence of Rec	-			Shallow Aq	• •
Iron Deposits (B5)	,		Recent Iron Red				FAC-Neutra	
Surface Soil Cracks (B6)		Stunted or Street	ssed Plants (D1)	(LRR A)			Mounds (D6) (LRR A)
Inundation Visible of	n Aerial Imagery (B	37)	Other (Explain i					e Hummocks (D7)
Sparsely Vegetated							_	
Field Observations:				Wetla	nd Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):		_[
Water Table Present?	☐ Yes	✓ No	Depth (inches):					☐ Yes ✓ No
Saturation Present?	Yes	✓ No	Depth (inches):					
(includes capillary fringe)							
Describe Recorded Data	(stream gauge, mo	onitoring wel	l, aerial photos, previ	ous inspections), if available:			
Remarks:								

Project/Site:	Port Gamble Redeve	lopment F	Plan	_City/County:	Kitsap Count	У	Sampling Date: 11/19/2012
Applicant/Owner:	Pope Resources				State	e: WA	Sampling Point: SP-17
Investigator(s):	J. Dadisman, D. Conli	n		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	ace, etc.): Hills	оре		Local Relief (con	cave, convex, r	none): none	Slope (%): 2-4%
Subregion (LLR):	Α		Lat:		Long	g: Datum:_	
Soil Map Unit Name:	Poulsbo gravelly sand	dy Ioam, 1	15-30%		_ N	IWI Classification: none	
Are climatic/hydrologic o	conditions on the site t	ypical for	this time of year?		✓ Yes	No (if no, explain i	n Remarks.)
Are Vegetation	Soil Hydrol	ogy	significantly distu	rbed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrol	ogy	naturally problem	natic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND	INGS						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres		Yes ✓ Yes ✓ Yes ✓		Is the sampled a Wetland?	rea within a	Yes V No	
Remarks:							
VEGETATION - Use s	scientific names of	nlants					
Tree Stratum		pianto	Absolute %	Dominant	Indicator	Dominance Test Worksheet:	
1			Cover	Species?	Status	Number of deminant Chasies	
<u>1.</u> 2.						Number of dominant Species That are OBL, FACW, or FAC:	1 (A)
3.					-	That are obe, thew, or the	
4.						Total Number of Dominant	
			0	= Total Cover		Species Across All Strata:	2 (B)
Sapling/Shurb Stratum		-		-			
1.					_	Percent of dominant Species	
2.					-	That are OBL, FACW, or FAC:	50 (A/B)
3.							
4.					-	Prevalence Index Worksheet:	
5.				Tatal Carray	<u>.</u>	Total % Cover of:	Multiply by:
Herb Stratum		-	0	= Total Cover		OBL Species 5	x 1 = 0 x 2 = 10
1. White Clover (Trifolius	m renens)		10	no	FAC		x3 = 165
2. Creeping Buttercup (F			5	no	FACW		x 4 = 60
3. Kentucky Bluegrass (F			40	yes	FAC		x 5 = 0
4. Common Dandelion (1	Taraxacum officinale)		15	yes	FACU	Column Totals: 75	(A) 235 (B)
5. Common Plantain (Pla	antago major)		5	no	FAC		
6. Grazed Grasses			35	no		Prevalence Index =	B/A = 3.13
7.					-,	4	
8.						Hydrophytic Vegetation Indicat	
<i>9.</i> 10.						1 - Rapid Test for Hydrophy 2 - Dominance Test is >50%	
11.						3 - Prevalence Index is ≤3.0	
11.			110	- Total Cayor			
Woody Vine Stratum		-	110	= Total Cover		Remarks or on a separate sh	
1.					-, 	5 - Wetland Non-Vascular F	
2.				- Total C		Problem Hydrophytic Vege	tation (Explain)
% Bare Ground	in Herb Stratum	0%	0	= Total Cover		¹ Indicators of hydric soil and we unless disturbed or problemation	etland hydrology must be present, c.
Remarks:						Hydrophytic Vegetation Pres	ent? Yes 🗸 No

Depth	Matri	X	Redox Features					·
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/3	100	Color (moist)	70	Турс	LOC	loam	Kemarks
0.20					_			
	· · · · · · · · · · · · · · · · · · ·				-			
			-		-			
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Ma	trix, CS=Covered or 0	Coated Sand Gra	ins. ² Location:	PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (A								Problematic Hydric Soils ³ :
□ 11:-+:1 (A4)			C					(440)
Histisol (A1)		H	Sandy Redox (S5)	-1			2 cm Mucl	
Histic Epipedon (A2)		님	Stripped Matrix (S6					t Material (TF2)
Black Histic (A3)	4)	H	Loamy Mucky Mine		: IVILRA 1)		_	ow Dard Surface (TF12)
Hydrogen Sulfide (A		님	Loamy Gleyed Mat				U Other (Exp	olain in Remarks)
Depleted Below Dar		H	Depleted Matrix (F				51	
Thick Dark Surface (•	님	Redox Dark Surface					hydrophytic vegetation and wetland
Sandy Mucky Miner		H	Depleted Dark Surf					st be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions				problematic.	
Restrictive Layer (if pres				Н	lydric Soil Presen	it?		
Type:								Yes V No
Depth (inches):								
Remarks:								
HYDROLOGY								
Wetland Hydrology Indi								
Primary Indicators (mini	mum of one requir	ed; check all	that apply)				Secondary Ind	icators (2 or more required)
			_				_	
Surface Water (A1)				Leaves (B9) (exc	cept MLRA			ined Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4	-			1, 2, 4A, a	
Saturation (A3)			Salt Crust (B11					Patterns (B10)
Water Marks (B1)	•		Aquatic Inverte					n Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfi					Visible on Aerial Imagery (C9)
Drift Deposits (B3)				spheres along Li				nic Position (D2)
Algal Mat or Crust (34)			duction Iron (C4				quitard (D3)
Iron Deposits (B5)	1		=	duction Tilled So	. ,			ral Test (D5)
Surface Soil Cracks (•	_,	=	essed Plants (D1) (LRR A)			t Mounds (D6) (LRR A)
Inundation Visible o			U Other (Explain	in Remarks)			Frost-Heav	ve Hummocks (D7)
Sparsely Vegetated	Concave Surface (B	8)						
Field Observations:				Wetla	and Hydrology Pr	esent?		
Surface Water Present?	Yes	V No	Depth (inches):		-			
Water Table Present?	∐ Yes		Depth (inches):		-			Yes V No
Saturation Present?	∴ Yes	✓ No	Depth (inches):		-			
(includes capillary fringe			l poriol phatas same	ious inseretises) if available:			
Describe Recorded Data	(stream gauge, mo	onitoring wel	i, aeriai priotos, prev	ious inspections	s), ir available:			
Pomarks								
Remarks:								

Project/Site:	Port Gamble Redevelopment	Plan	City/County:	Kitsap County	У	Sampling Date: 11	./19/2012
Applicant/Owner:	Pope Resources			State	: <u>W</u> A	Sampling Point: SP-1	18
Investigator(s):	J. Dadisman, D. Conlin		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E		
Landform (hillslope, terr	ace, etc.): Hillslope		Local Relief (con	cave, convex, r	none): concave	Slope (%):	0%
Subregion (LLR):	<u>A</u>	Lat:		Long	: Datum:		
Soil Map Unit Name:	Kitsap silt loam, 8-15% slopes			_ N	WI Classification: none		
Are climatic/hydrologic	conditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain	in Remarks.)	
Are	Soil Hydrology	significantly distur	bed?	Are "normal	circumstances" present?	✓ Yes No	
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FIND							
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No		
Remarks:							
	scientific names of plants.						
Tree Stratum	scientine names or plants.	Absolute %	Dominant	Indicator	Dominance Test Worksheet:		
1.		Cover	Species?	Status	Number of dominant Species		
2.				-	That are OBL, FACW, or FAC:	2	(A)
3.					1		
4.					Total Number of Dominant		
	,	0	= Total Cover		Species Across All Strata:	2	(B)
Sapling/Shurb Stratum							
1.				-	Percent of dominant Species	100	(A /D)
2. 3.				-	That are OBL, FACW, or FAC:	100	(A/B)
<i>4.</i>					Prevalence Index Worksheet:		
5.					Total % Cover of:	Multiply by:	
<u>. </u>		0	= Total Cover	-	OBL Species	x 1 = 0	
Herb Stratum	,	-			FACW Species	x 2 = 0	
1. Soft Rush (Juncus effu	ısus)	70	yes	FACW	FAC Species	x 3 = 0	
2. Creeping Buttercup (F		10	no	FACW	FACU Species	x 4 = 0	
3. Kentucky Bluegrass (I	Poa pratensis)	20	yes	FAC	UPL Species	x 5 = 0	
4.				- 1	Column Totals: 0	(A) <u>0</u>	(B)
<i>5. 6.</i>					Prevalence Index :	_ D/A _	
7.				-	Prevalence index	- b/A	
8.				-	Hydrophytic Vegetation Indica	tors:	
9.				-	1 - Rapid Test for Hydroph		
10.					2 - Dominance Test is >509		
11.					3 - Prevalence Index is ≤3.0	\mathfrak{I}^1	
Woody Vine Stratum		100	= Total Cover		4 - Morphological Adaptat Remarks or on a separate s	cions ¹ (provide supporting data sheet.	in
1.					5 - Wetland Non-Vascular	Plants ¹	
2.					Problem Hydrophytic Vege	etation (Explain)	
% Bare Ground	in Herb Stratum0%	0	= Total Cover		¹ Indicators of hydric soil and w unless disturbed or problemat	vetland hydrology must be presic.	sent,
Remarks:		•			Hydrophytic Vegetation Pre		

Depth	Matri	X	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-7	10YR 2/2	100					loam	
7-16	10YR 4/1	95	10YR 5/6	5	С	М	loam	
					· ·			
	·							
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Mat	rix, CS=Covered or C	oated Sand G	rains. ² Location:	PL=Pore Linir	ng, M=Matrix	
Hydric Soil Indicators: (A	applicable to all LR	Rs, unless ot	herwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muc	k (A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6))				at Material (TF2)
Black Histic (A3)		H	Loamy Mucky Mine	•	pt MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A4	1)	Ħ	Loamy Gleyed Matr		,			olain in Remarks)
Depleted Below Dark			Depleted Matrix (F3					•
Thick Dark Surface (A		Ħ	Redox Dark Surface				³ Indicators of	hydrophytic vegetation and wetland
Sandy Mucky Minera	•	Ħ	Depleted Dark Surfa					st be present, unless disturbed or
Sandy Gleyed Matrix			Redox Depressions				problematic.	•
Restrictive Layer (if pres			'		Hydric Soil Presen	t?	•	
Type:	•				ĺ			□ Vaa □ Na
Depth (inches):								✓ Yes No
Remarks:					<u> </u>			
HYDROLOGY								
Wetland Hydrology Indi	rators:							
Primary Indicators (minir		ed: check all	that apply)				Secondary Ind	icators (2 or more required)
		,					,	
Surface Water (A1)			Water-Stained I	Leaves (B9) (e	xcept MLRA		☐ Water-Sta	ined Leaves (B9) (MLRA
High Water Table (A2	2)		1, 2, 4A, and 4I		•		1, 2, 4A, a	
Saturation (A3)	•		Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Inverte	brates (B13)			Dry-Seaso	n Water Table (C2)
Sediment Deposits (E	32)		Hydrogen Sulfic	le Odor (C1)				Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos	pheres along	Living Roots (C3)		Geomorpl	nic Position (D2)
Algal Mat or Crust (B	4)		Presence of Rec	duction Iron (0	C4)		Shallow A	quitard (D3)
☐ Iron Deposits (B5)			Recent Iron Red	luction Tilled	Soils (C6)		FAC-Neut	ral Test (D5)
Surface Soil Cracks (E	36)		Stunted or Stre	ssed Plants (D	1) (LRR A)		Raised An	t Mounds (D6) (LRR A)
Inundation Visible or	n Aerial Imagery (B	37)	Other (Explain i	n Remarks)			Frost-Hea	ve Hummocks (D7)
Sparsely Vegetated C	Concave Surface (B	88)						
Field Observations:				Wet	tland Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):					_
Water Table Present?	✓ Yes	☐ No	Depth (inches):		0			✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):		0			
(includes capillary fringe)								
Describe Recorded Data	(stream gauge, mo	onitoring well	, aerial photos, previ	ous inspection	ns), if available:			
Remarks:								
I								

Project/Site:	Port Gamble Redevelopment	Plan	City/County:	Kitsap County	У	Sampling Date: 11/19/2012
Applicant/Owner:	Pope Resources			State	: <u>W</u> A	Sampling Point: SP-19
Investigator(s):	J. Dadisman, D. Conlin		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E	
Landform (hillslope, terr	race, etc.): Hillslope		Local Relief (con	cave, convex, r	none): none	Slope (%): <u>2-4%</u>
Subregion (LLR):	<u>A</u>	Lat:		Long	: Datum:_	
Soil Map Unit Name:	Kitsap silt loam, 8-15% slopes			_ N	WI Classification: none	
Are climatic/hydrologic	conditions on the site typical for	this time of year?		✓ Yes	No (if no, explain i	in Remarks.)
Are	Soil Hydrology	significantly distur	bed?	Are "normal	circumstances" present?	✓ Yes No
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)	
SUMMARY OF FIND						
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No	_
Remarks:						
	scientific names of plants.					
Tree Stratum	·	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1.		Cover	эресіез:	Status	Number of dominant Species	
2.					That are OBL, FACW, or FAC:	1 (A)
3.]	
4.					Total Number of Dominant	
	,	0	= Total Cover		Species Across All Strata:	1 (B)
Sapling/Shurb Stratum						
<u>1.</u> 2.				-	Percent of dominant Species That are OBL, FACW, or FAC:	100 (A/B)
<i>3.</i>					That are OBL, FACW, or FAC.	100 (A/B)
4.					Prevalence Index Worksheet:	
5.					Total % Cover of:	Multiply by:
<u></u>		0	= Total Cover		OBL Species	x 1 = 0
Herb Stratum	•		•		FACW Species	x 2 = 0
1. Soft Rush (Juncus effu		80	yes	FACW	FAC Species	x 3 = 0
2. Creeping Buttercup (F	Ranunculus repens)	5	no	FACW	FACU Species	x 4 =0
3.	_				UPL Species	x 5 = 0
4.					Column Totals: 0	(A) <u>0</u> (B)
<i>5. 6.</i>					Prevalence Index =	- Β/Λ -
7.					- Frevalence muex -	
8.	_				Hydrophytic Vegetation Indicat	ors:
9.					1 - Rapid Test for Hydrophy	
10.					✓ 2 - Dominance Test is >50%	,
11.					3 - Prevalence Index is ≤3.0	1
Woody Vine Stratum		85	= Total Cover		4 - Morphological Adaptati Remarks or on a separate sl	ons ¹ (provide supporting data in neet.
1.					5 - Wetland Non-Vascular F	
2.					Problem Hydrophytic Vege	tation (Explain)
% Bare Ground	in Herb Stratum5%	0	= Total Cover		¹ Indicators of hydric soil and wo unless disturbed or problemati	etland hydrology must be present, c.
Remarks:					Hydrophytic Vegetation Pres	ent?

Depth	Matrix	(Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/1	95	10YR 3/6	5	C	М	loam	
¹ Type: C=Concentration,	D=Depletion, RM-F	Reduced Ma	trix, CS=Covered or C	Coated Sand G	rains. ² Location:	PL=Pore Linir	ng, M=Matrix	
Hydric Soil Indicators: (A	Applicable to all LR	Rs, unless of	therwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muck	(A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6	5)				t Material (TF2)
Black Histic (A3)		Ħ	Loamy Mucky Mine	-	ot MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	4)	H	Loamy Gleyed Matr		,			plain in Remarks)
Depleted Below Dark		H	Depleted Matrix (F3					•
Thick Dark Surface (• •	<u> </u>	Redox Dark Surface				³ Indicators of h	nydrophytic vegetation and wetland
Sandy Mucky Minera	•	П	Depleted Dark Surfa					t be present, unless disturbed or
Sandy Gleyed Matrix		П	Redox Depressions	, ,			problematic.	
Restrictive Layer (if pres					Hydric Soil Presen	t?	p. c.c.c.	
Type:					ĺ			□ v □ N.
Depth (inches):								✓ Yes No
Remarks:								
The marks:								
HYDROLOGY								
Wetland Hydrology Indi	cators:							
Primary Indicators (mini		d check all	that annly)				Secondary Indi	cators (2 or more required)
I mary marcators (mini	manifor one require	a, cricck an	that apply)				Secondary man	reactors (2 or more required)
Surface Water (A1)			☐ Water-Stained	Leaves (B9) (e	xcept MLRA		☐ Water-Stai	ined Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4				1, 2, 4A, a	
Saturation (A3)	_,		Salt Crust (B11)					Patterns (B10)
Water Marks (B1)			Aquatic Inverte					n Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfic					Visible on Aerial Imagery (C9)
Drift Deposits (B3)	•				Living Roots (C3)			nic Position (D2)
Algal Mat or Crust (E	34)		Presence of Rec				=	quitard (D3)
Iron Deposits (B5)	,		Recent Iron Rec		•			al Test (D5)
Surface Soil Cracks (B6)		Stunted or Stre					: Mounds (D6) (LRR A)
Inundation Visible or	•	7)	Other (Explain i		, ,			ve Hummocks (D7)
Sparsely Vegetated (-	_ ` ` '	•			_	, ,
Field Observations:	,	•		Wet	land Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):] , , ,			
Water Table Present?	Yes	✓ No	Depth (inches):					✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):		0			
(includes capillary fringe)		_					
Describe Recorded Data	(stream gauge, mo	nitoring wel	l, aerial photos, previ	ious inspectio	ns), if available:			
Remarks:								
I								

Project/Site:	Port Gamble Redevelopment P		Plan	_City/County:	Kitsap County	/		Sampling Da	te: 6/18/2012
Applicant/Owner:	Pope Resources				_ State	: <u>W</u> A		Sampling Poi	nt: <u>SP-20</u>
Investigator(s):	J. Dadisman, T. Ba	nnister		Section/Townsh	nip/Range:	Sec 7 Town 27N Rang	7N Range 2E		
Landform (hillslope, terra	ce, etc.): <u>D</u>	epression		Local Relief (cor	ncave, convex, r	none): <u>Conc</u>	ave	Slope (%	%): <u>N/A</u>
Subregion (LLR):	Α		Lat:		_ Long	:	Datum:		
Soil Map Unit Name:	Kapaosin gravelly	loam, 0-6% s	slopes		N	WI Classification: none	!		
Are climatic/hydrologic co	onditions on the sit	te typical for	this time of year?		✓ Yes	☐ No (if no	, explain in Re	marks.)	
Are Vegetation [Soil Hyd	drology	significantly distu	rbed?	Are "normal	circumstances" present	?	✓ Yes 🗌	No
Are Vegetation [Soil Hyd	drology	naturally problem	natic?	(if needed, ex	xplain any answers in Re	emarks.)		
SUMMARY OF FINDI	NGS								
Hydrophytic Vegetation P Hydric Soil Present? Weltand Hydrology Prese	[✓ Yes	No No No	Is the sampled a Wetland?	area within a	✓ Yes No			
Remarks:									
VEGETATION - Use so	rientific names	of plants.							
Tree Stratum		or plants.	Absolute %	Dominant	Indicator	Dominance Test Wor	kshoot:		
			Cover	Species?	Status	4			
<u>1.</u> 2.						Number of dominant That are OBL, FACW,	•	3	(4)
<i>3.</i>						That are OBL, FACW,	OI FAC	5	(A)
<u>4.</u>						Total Number of Dom	ninant		
			0	= Total Cover		Species Across Al		4	(B)
Sapling/Shurb Stratum		-		=					
1. Red Alder (Alnus rubra			10	yes	FAC	Percent of dominant	•		
2. Himalayan Blackberry	•	ıs)	10	yes	FACU	That are OBL, FACW,	or FAC:	75	(A/B)
3. Nootka Rose (Rosa noo	otkana)		5	yes	FAC				
<u>4.</u>						Prevalence Index Wor		eta la discu	
5.			25	= Total Cover		Total % Cover of OBL Species	x 1 =	tiply by: -	0
Herb Stratum		-	23	Total Cover		FACW Species	x 1 =		0
1. Reed Canary Grass (Ph	alaris arundinaced	a)	70	yes	FACW	FAC Species	x3=		0
2. Creeping Buttercup (Ro			15	no	FAC	FACU Species	x 4 =		0
3. Soft Rush (Juncus effus			10	no	FACW	UPL Species	x 5 =	=	0
4. Lady Fern (Athyrium fil	lix-femina)		5	no	FAC	Column Totals:	(A)		0 (B)
5.				ì <u></u>					
<i>6.</i>						Prevalen	ce Index = B/A	=	
7.				1			t dt k		
<i>8.</i> <i>9.</i>						Hydrophytic Vegetation 1 - Rapid Test for		logotation	
<u>10.</u>						2 - Dominance Te		egetation	
11.					-1	3 - Prevalence Inc			
			100	= Total Cover	-11	4 - Morphologica		(provide supporti	ng data in
Woody Vine Stratum		-	100	- Total Cover		Remarks or on a s			15 uata 111
1.						5 - Wetland Non-			
2.						Problem Hydroph			
			0	= Total Cover		7.	-		
C/ D	- Hawk Ct	221				¹ Indicators of hydric s		a nydrology must	pe present,
% Bare Ground in	n Herb Stratum	0%				unless disturbed or pr	robiematic.		
Remarks:						Hydrophytic Vegeta	ation Dracont?		¬
nemarks:						riyuropiiyuc vegeta	ation Present?	✓ Yes	No
						<u> </u>			

Depth	Matrix	(Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 4/1	90	10 YR 4/6	10	С	М	loam	
1	. D. Davilatian DM F	N 1 N 4 -	that CC Carranal and	C+ C C-	2,	DI Dana Hair	- DA DA-t-i	
¹ Type: C=Concentratio	•			Loated Sand Gr	ains. Location:	PL=Pore Linii		
Hydric Soil Indicators:	(Applicable to all LRI	Rs, unless o	therwise noted.)				Indicators for I	Problematic Hydric Soils ³ :
		_						
Histisol (A1)			Sandy Redox (S5)				2 cm Muck	
Histic Epipedon (A	2)		Stripped Matrix (Se					: Material (TF2)
Black Histic (A3)] Loamy Mucky Mine	eral (F1) (excep	t MLRA 1)		☐ Very Shallo	ow Dard Surface (TF12)
✓ Hydrogen Sulfide (A4)] Loamy Gleyed Mat	rix (F2)			Other (Exp	lain in Remarks)
Depleted Below Da	ark Surface (A11)		Depleted Matrix (F	3)				
Thick Dark Surface			Redox Dark Surface				³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Mine	· •		Depleted Dark Surf					t be present, unless disturbed or
Sandy Gleyed Mat			Redox Depressions				problematic.	
Restrictive Layer (if pr			, Nedox Depressions		Hydric Soil Presen	t?	problematica	
Тур								
Depth (inches								✓ Yes No
	o)							
Remarks:								
HYDROLOGY								
Wetland Hydrology In	dicators:							
Primary Indicators (mi		d: check al	I that apply)				Secondary Indi	cators (2 or more required)
i i i i i i i i i i i i i i i i i i i	a or one require	,	ac app.,,,				occomunity man	oatoro (2 or more requirea)
Surface Water (A1	١		☐ Water-Stained	Leaves (R9) (ex	cent MIRA		□ Water-Stai	ned Leaves (B9) (MLRA
High Water Table	•		1, 2, 4A, and 4		cept William		1, 2, 4A, a	
Saturation (A3)	(42)		Salt Crust (B11					atterns (B10)
Water Marks (B1)	(D2)		Aquatic Inverte					Water Table (C2)
Sediment Deposits	• •		Hydrogen Sulfi					Visible on Aerial Imagery (C9)
Drift Deposits (B3)					iving Roots (C3)			ic Position (D2)
Algal Mat or Crust	(B4)		Presence of Re				Shallow Aq	
Iron Deposits (B5)			Recent Iron Re				FAC-Neutra	
Surface Soil Cracks	s (B6)		Stunted or Stre	essed Plants (D1	L) (LRR A)		Raised Ant	Mounds (D6) (LRR A)
Inundation Visible	on Aerial Imagery (B7	7)	Other (Explain	in Remarks)			Frost-Heav	e Hummocks (D7)
Sparsely Vegetated	d Concave Surface (B8	3)						
Field Observations:				Wetl	and Hydrology Pr	esent?		
Surface Water Present	? Yes	✓ No	Depth (inches):					
Water Table Present?	✓ Yes	☐ No	Depth (inches):	(<u> </u>			✓ Yes No
Saturation Present?	▼ Yes	□ No	Depth (inches):	(5			
(includes capillary fring			· · · / -		_			
Describe Recorded Dat		nitoring we	II. aerial photos, prev	rious inspection	s), if available:			
2,21.121.1207.424.24	(00000) 1110		, , pi ev		-,, = = =			
Remarks:								

Project/Site:	Port Gamble Re	devel	opmen	t Plan	City/County:	Kitsap County				Sampling Date:	6/18/2012
Applicant/Owner:	Pope Resources	1				State	e: WA			Sampling Point: S	P-21
Investigator(s):	J. Dadisman, T. I	Banni	ster		Section/Townsh	nip/Range:	Sec 7 Town 27N Ran	ge 2E			
Landform (hillslope, terr	race, etc.):	Hillsle	оре		_ Local Relief (cor	ncave, convex, i	none): N/A			Slope (%): <u>1</u>	-3%
Subregion (LLR):	Α			Lat	:	_ Long	;:	Datum:			
Soil Map Unit Name:	Kapaosin gravel	ly loai	m, 0-6%	% slopes			IWI Classification: none	9			
Are climatic/hydrologic	conditions on the	site ty	ypical fo	or this time of year	?	✓ Yes	☐ No (if n	o, explain	in Remar	ks.)	
Are	Soil H	lydrolo	ogy	significantly dist	urbed?	Are "normal	l circumstances" present?			✓ Yes No	
Are Vegetation	Soil H	lydrolo	ogy	naturally proble	matic?	(if needed, e	xplain any answers in R	emarks.)			
SUMMARY OF FIND											
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres		=	Yes	✓ No ✓ No ✓ No	Is the sampled a Wetland?	area within a	☐ Yes ✓ No				
Remarks:											
VEGETATION - Use	scientific name	es of	plant	s.							
Tree Stratum_				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Wo	rksheet:			
1.							Number of dominant	Species			
2.							That are OBL, FACW,	•		1	(A)
3.							7				
4.							Total Number of Dor	ninant			
			0	= Total Cover		Species Across A	II Strata:		3	(B)	
Sapling/Shurb Stratum	-										
1. Himalayan Blackberr	•	cus)		50	yes	FACU	Percent of dominant				(. (.)
2. Thimbleberry (Rubus	parviflorus)			40	yes	FACU	That are OBL, FACW,	or FAC:		33.3333333	(A/B)
3. 4.					- 1		Dravalance Inday We	rlich ooti			
<i>4. 5.</i>						_	Prevalence Index Wo		Multiply	, by	
5.				90	= Total Cover		OBL Species	01.	$\frac{\text{Multiply}}{\text{x 1}} =$	0	
Herb Stratum							FACW Species		x 2 =	0	
1. Creeping Buttercup (I	_ Ranunculus repens	s)		10	no	FAC	FAC Species	70	x 3 =	210	
2. Colonial Bentgrass (A		•		60	yes	FAC	FACU Species	90	x 4 =	360	
3.							UPL Species		x 5 =	0	
4.							Column Totals:	160	(A)	570	(B)
5.											
6.							Prevaler	ice Index	= B/A = _	3.56	
7.					_	-1-		دمانمانمه	.		
<i>8.</i> <i>9.</i>					_		Hydrophytic Vegetat 1 - Rapid Test for			tation	
10.				<u> </u>			2 - Dominance Te			tation	
11.					_		3 - Prevalence In				
			70	= Total Cover	<u>-</u> .	4 - Morphologica	ıl Adaptat	ions ¹ (pro	ovide supporting da	ata in	
Woody Vine Stratum							Remarks or on a s				
1.				_	_		5 - Wetland Non			valain)	
2.					= Total Cover		Problem Hydrop	nytic Vege	tation (E	xpiain)	
% Bare Ground	in Herb Stratum				Total Cover		¹ Indicators of hydric unless disturbed or p			drology must be p	resent,
Remarks:							Hydrophytic Veget	ation Pre	sent?	☐ Yes ✓ M	No

Depth	Matri	Х	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 3/3	100					silt loam	
6-16	10YR 4/3	100					silt loam	
			_					
			_					
					·			
¹ Type: C=Concentration,	D=Depletion, RM-	Reduced Ma	trix, CS=Covered or C	Coated Sand Gra	ins. ² Location:	PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (A	pplicable to all LR	Rs, unless o	therwise noted.)				Indicators for	Problematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Mucl	k (A10)
Histic Epipedon (A2)		H	Stripped Matrix (S6)				t Material (TF2)
Black Histic (A3)		H	Loamy Mucky Mine		MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A4	4)	H	Loamy Gleyed Matr		,			plain in Remarks)
Depleted Below Dark		H	Depleted Matrix (F3					,
Thick Dark Surface (A	• •	H	Redox Dark Surface				³ Indicators of I	hydrophytic vegetation and wetland
Sandy Mucky Minera	•	Ħ	Depleted Dark Surfa					st be present, unless disturbed or
Sandy Gleyed Matrix		Ħ	Redox Depressions	` '			problematic.	se we present, armess alotal weare.
Restrictive Layer (if pres			nedex 2 epi essiens		ydric Soil Present	t?	problemation	
Type:						•		П., П.,
Depth (inches):	•							☐ Yes ✓ No
Remarks:								
HYDROLOGY								
Wetland Hydrology India	cators:							
Primary Indicators (minir	num of one requir	ed; check all	that apply)				Secondary Ind	icators (2 or more required)
Surface Water (A1)				Leaves (B9) (exc	ept MLRA		☐ Water-Sta	ined Leaves (B9) (MLRA
High Water Table (A2	2)		1, 2, 4A, and 4				1, 2, 4A, a	
Saturation (A3)			Salt Crust (B11)	1				Patterns (B10)
Water Marks (B1)			Aquatic Inverte				_	n Water Table (C2)
Sediment Deposits (E	32)		Hydrogen Sulfic					Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos					nic Position (D2)
Algal Mat or Crust (B	4)		Presence of Rec					quitard (D3)
Iron Deposits (B5)			Recent Iron Rec				=	ral Test (D5)
Surface Soil Cracks (E	•		Stunted or Stre		(LRR A)			t Mounds (D6) (LRR A)
Inundation Visible or		•	U Other (Explain i	in Remarks)			Frost-Heav	ve Hummocks (D7)
Sparsely Vegetated C	Concave Surface (B	8)						
Field Observations:		_		Wetla	nd Hydrology Pre	esent?		
Surface Water Present?	☐ Yes	☑ No	Depth (inches):					
Water Table Present?	Yes	✓ No	Depth (inches):					Yes V No
Saturation Present?	Yes	✓ No	Depth (inches):					
(includes capillary fringe)								
Describe Recorded Data	(stream gauge, mo	nitoring wel	l, aerial photos, previ	ious inspections), if available:			
Pomarks:								
Remarks:								

Project/Site:	Port Gamble Redevelopment P	lan	City/County:	Kitsap County	У	Sampling Da ^s	te: 6/18/2012
Applicant/Owner:	Pope Resources			State	:: <u>W</u> A	Sampling Poi	nt: <u>SP-22</u>
Investigator(s):	J. Dadisman, T. Bannister		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E		
Landform (hillslope, terra	ce, etc.): Depression		Local Relief (con	icave, convex, r	none): Concave	Slope (9	%): <u>1-3%</u>
Subregion (LLR):	<u>A</u>	Lat:		Long	:: Datum:		<u>—</u>
Soil Map Unit Name:	Kapaosin gravelly loam, 6-15%	slopes		_ N	IWI Classification: none		_
Are climatic/hydrologic co	onditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain	in Remarks.)	
Are Vegetation	Soil Hydrology	significantly distur	bed?	Are "normal	circumstances" present?	✓ Yes 🗌	No
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FINDI							
Hydrophytic Vegetation F Hydric Soil Present? Weltand Hydrology Prese	✓ Yes 🗌	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No		
Remarks:							
	cientific names of plants.						
Tree Stratum		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:		
1.	•	Cover	эресіез:	Status	Number of dominant Species		
2.				_	That are OBL, FACW, or FAC:	4	(A)
<u>3</u> .						-	(7.7)
4.					Total Number of Dominant		
		0	= Total Cover		Species Across All Strata:	4	(B)
Sapling/Shurb Stratum	_		-		1		,
1.					Percent of dominant Species		
2.					That are OBL, FACW, or FAC:	100	(A/B)
3.					1		, , ,
4.					Prevalence Index Worksheet:		
5.					Total % Cover of:	Multiply by:	
		0	= Total Cover		OBL Species	x 1 =	0
Herb Stratum	_		_		FACW Species	x 2 =	0
1. Creeping Buttercup (R	anunculus repens)	40	yes	FAC	FAC Species	x 3 =	0
2. Colonial Bentgrass (Ag	rostis capillaris)	40	yes	FAC	FACU Species	x 4 =	0
3. Meadow Foxtail (Alop	ecurus pratensis)	40	yes	FAC	UPL Species	x 5 =	0
4. Slough Sedge (Carex o	bnupta)	30	yes	OBL	Column Totals:	(A)	0 (B)
5.					_		
6.				_	Prevalence Index	= B/A =	
7.					4		
8.				- · · · · · · · · · · · · · · · · · · ·	Hydrophytic Vegetation Indica		
9.					1 - Rapid Test for Hydroph		
10.					2 - Dominance Test is >50		
11.					3 - Prevalence Index is ≤3.		
Woody Vine Stratum	-	150	= Total Cover		4 - Morphological Adapta Remarks or on a separate		ng data in
1.				_	5 - Wetland Non-Vascular		
2.		0	= Total Cover		Problem Hydrophytic Veg	etation (Explain)	
% Bare Ground i	n Herb Stratum0%	U	= rotal cover		¹ Indicators of hydric soil and v unless disturbed or problemat		be present,
Remarks:					Hydrophytic Vegetation Pre	esent?	No

Бериі	IVIatrix	(Redox realures					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 4/1	90	10YR 6/6	10	С	M	Clay loam	
8-12	7.5YR 4/6	60	10YR 5/1	40	С	М	Clay loam	
								
					-			
					-			
1 _T C. Composite	n D Danistian DM () - d d. N.4 -	their CC Correspond on C	Seeted Cand Cue	21 2221	DI Dava Linis		
, ,	on, D=Depletion, RM-F			Joaled Sand Gra	iiis. Location	: PL=Pore Linii		
Hydric Soil Indicators	: (Applicable to all LR	Rs, unless o	therwise noted.)				Indicators for Pr	oblematic Hydric Soils ³ :
		_						
Histisol (A1)		_	Sandy Redox (S5)				2 cm Muck (
Histic Epipedon (A	A2)		Stripped Matrix (S6					Material (TF2)
Black Histic (A3)			Loamy Mucky Mine		: MLRA 1)		_	v Dard Surface (TF12)
Hydrogen Sulfide	(A4)		Loamy Gleyed Mati	rix (F2)			Other (Expla	iin in Remarks)
Depleted Below D	ark Surface (A11)	✓	Depleted Matrix (F:	3)				
Thick Dark Surface			Redox Dark Surface				³ Indicators of hy	drophytic vegetation and wetland
Sandy Mucky Min	· •		Depleted Dark Surf	• •			hydrology must	be present, unless disturbed or
Sandy Gleyed Ma			Redox Depressions				problematic.	,
Restrictive Layer (if p			1 Redox Bepressions		lydric Soil Preser	nt?	problematica	
	pe: Rock/gravel			• •	 		_	
	es): 12 inches							✓ Yes No
	.3). <u>12 menes</u>							
Remarks:								
HYDROLOGY								
Wetland Hydrology In	ndicators:							
Primary Indicators (m		ed; check all	that apply)				Secondary Indica	ators (2 or more required)
, , , , , , , , , , , , , , , , , , , ,			7,				, , , , , ,	
Surface Water (A:	L)		☐ Water-Stained	Leaves (B9) (exc	cept MLRA		☐ Water-Stain	ed Leaves (B9) (MLRA
High Water Table	•		1, 2, 4A, and 4				1, 2, 4A, and	
Saturation (A3)	(/ 12/		Salt Crust (B11)				Drainage Par	
Water Marks (B1)			Aquatic Inverte					Water Table (C2)
Sediment Deposit			Hydrogen Sulfic					sible on Aerial Imagery (C9)
					ving Boots (C2)			
Drift Deposits (B3				spheres along Li				Position (D2)
Algal Mat or Crus			Presence of Re				Shallow Aqu	
Iron Deposits (B5)			Recent Iron Rec				FAC-Neutral	, ,
Surface Soil Crack		_,	Stunted or Stre) (LRR A)			Mounds (D6) (LRR A)
	on Aerial Imagery (B	-	U Other (Explain	in Remarks)			☐ Frost-Heave	Hummocks (D7)
	d Concave Surface (B	3)						
Field Observations:	_	_		Wetla	ınd Hydrology Pr	esent?		
Surface Water Presen	t? Yes	✓ No	Depth (inches):		_		_	
Water Table Present?	✓ Yes	☐ No	Depth (inches):	10	_[✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):	0	_[
(includes capillary frin								
Describe Recorded Da	ta (stream gauge, mo	nitoring we	II, aerial photos, prev	ious inspections	s), if available:	<u></u>		
Remarks:								

Project/Site:	Port Gamble Redevelopment P	lan	City/County:	Kitsap Count	У	Sampling Date: 6/18/2012				
Applicant/Owner:	Pope Resources			_ State	:: <u>W</u> A	Sampling Point: SP	-23			
Investigator(s):	J. Dadisman, T. Bannister		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E					
Landform (hillslope, terra	ace, etc.): hillslope		Local Relief (con	ncave, convex, r	none): none	Slope (%): <u>0-</u>	1%			
Subregion (LLR):	_A	Lat:		Long	: Datum:					
Soil Map Unit Name:	Kapaosin gravelly loam, 0-6% s	lopes		_ N	WI Classification: none					
Are climatic/hydrologic c	onditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain	in Remarks.)				
Are Vegetation	Soil Hydrology	significantly distur	bed?	Are "normal circumstances" present?						
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	eded, explain any answers in Remarks.)					
SUMMARY OF FIND			ı							
Hydrophytic Vegetation F Hydric Soil Present? Weltand Hydrology Prese	✓ Yes 🗌	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No					
Remarks:										
VEGETATION - Use s	cientific names of plants.									
Tree Stratum		Absolute %	Dominant	Indicator	Dominance Test Worksheet:					
		Cover	Species?	Status	_					
 Big-leaf Maple (Acer n Grand Fir (Abies grand 		100 20	yes	FACU FACU	Number of dominant Species That are OBL, FACW, or FAC:	2	(4)			
3.	us)	20	no	FACU	That are OBL, FACW, or FAC.		(A)			
<i>4.</i>	,				Total Number of Dominant					
		120	= Total Cover		Species Across All Strata:	3	(B)			
Sapling/Shurb Stratum	-	-	•				,			
1. Nootka Rose (Rosa nu	tkana)	10	yes	FAC	Percent of dominant Species					
2.					That are OBL, FACW, or FAC:	66.6666667	(A/B)			
3.										
4.					Prevalence Index Worksheet:					
<i>5</i> .	,				Total % Cover of:	Multiply by:				
	_	10	= Total Cover		OBL Species	x 1 =0				
Herb Stratum	His faminal	20		FAC	FACW Species	x 2 = 0				
 Lady Fern (Athyrium fine) Slough Sedge (Carex of) 		20 100	no	- FAC OBL	FAC Species FACU Species	x 3 = 0 x 4 = 0				
3.	ыниргиј	100	yes	OBL	UPL Species	x 4 = 0 x 5 = 0				
4.				_	Column Totals:	(A) 0	(B)			
5.							(-)			
6.					Prevalence Index	= B/A =				
7.										
8.	,				Hydrophytic Vegetation Indica					
9.				_	1 - Rapid Test for Hydroph					
10.					2 - Dominance Test is >50					
11.	,			_	3 - Prevalence Index is ≤3.					
Woody Vine Stratum	-	120	= Total Cover		Remarks or on a separate s		ta in			
1. 2.					5 - Wetland Non-Vascular Problem Hydrophytic Veg					
<u> </u>	.,,	0	= Total Cover		7,					
% Bare Ground i	in Herb Stratum0%		- 10(8) 00461		¹ Indicators of hydric soil and wunless disturbed or problemat		esent,			
Remarks:					Hydrophytic Vegetation Pre	esent?	0			

Depth	Matrix	(Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 2/1	95	10YR 4/6	5	С	М	Silt loam	
					1			
					1			
							. ,	
					-			
			 -		-			
1- 0.0	D D 1 11 D14 5				. 2,	DI D 11 1		
¹ Type: C=Concentration	·			Loated Sand Gr	ains. Location:	PL=Pore Lini		2
Hydric Soil Indicators:	(Applicable to all LR	Rs, unless o	therwise noted.)				Indicators for P	roblematic Hydric Soils ³ :
		_						
Histisol (A1)		<u>_</u>	Sandy Redox (S5)				2 cm Muck	
Histic Epipedon (A2	2)		Stripped Matrix (S6					Material (TF2)
Black Histic (A3)			Loamy Mucky Mine		t MLRA 1)			w Dard Surface (TF12)
Hydrogen Sulfide (A	44)		Loamy Gleyed Mat	rix (F2)			Other (Expl	ain in Remarks)
Depleted Below Da	rk Surface (A11)		Depleted Matrix (F	3)				
Thick Dark Surface		✓	Redox Dark Surface	e (F6)			³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Mine	• •		Depleted Dark Surf	· ,			hydrology must	be present, unless disturbed or
Sandy Gleyed Matr			Redox Depressions				problematic.	, ,
Restrictive Layer (if pre			, rieden zepressiens		Hydric Soil Presen	t?	problemation	
Туре	-							
Depth (inches								✓ Yes No
	J·							
Remarks:								
HYDROLOGY								
Wetland Hydrology Inc	dicators:							
Primary Indicators (min		ed; check al	I that apply)				Secondary India	cators (2 or more required)
, , , , , , , , , , , , , , , , , , , ,		,	77				, , ,	,
Surface Water (A1)	ı		☐ Water-Stained	Leaves (B9) (ex	cept MLRA		☐ Water-Stair	ned Leaves (B9) (MLRA
✓ High Water Table (1, 2, 4A, and 4		cept mines		1, 2, 4A, ar	
Saturation (A3)	M2)		Salt Crust (B11					atterns (B10)
Water Marks (B1)			Aquatic Inverte				_	Water Table (C2)
	(D2)							
Sediment Deposits	(BZ)		Hydrogen Sulfi					/isible on Aerial Imagery (C9)
Drift Deposits (B3)					iving Roots (C3)			c Position (D2)
Algal Mat or Crust	(B4)			duction Iron (C			Shallow Aq	
Iron Deposits (B5)				duction Tilled S			FAC-Neutra	
Surface Soil Cracks	(B6)		Stunted or Stre	essed Plants (D1	.) (LRR A)		Raised Ant	Mounds (D6) (LRR A)
Inundation Visible of	on Aerial Imagery (B	7)	Other (Explain	in Remarks)			Frost-Heave	e Hummocks (D7)
Sparsely Vegetated	Concave Surface (B	3)						
Field Observations:				Wetla	and Hydrology Pr	esent?		
Surface Water Present?	? Yes	✓ No	Depth (inches):]			
Water Table Present?	✓ Yes	□ No	Depth (inches):	()			✓ Yes No
Saturation Present?	✓ Yes	□ No	Depth (inches):	(-			
(includes capillary fring					-1			
Describe Recorded Data		nitoring we	II. aerial photos, prev	ious inspection	s), if available			
2 2301 No Necol dea Dati	a (ser carri gaage, mo		, acriai priocos, prev	.ous mopeonon	o,, ii available.			
Remarks:								
inciliai ks.								

Project/Site:	te: Port Gamble Redevelopment		Plan	_City/County:	Kitsap County		-	San	npling Date: _	6/18/2012
Applicant/Owner:	Pope Resources				State	: <u>WA</u>	<u>.</u>	Sam	pling Point: S	P-24
Investigator(s):	J. Dadisman, T. Ba	nnister		Section/Townsh	nip/Range:	Sec 7 Town 27N	l Range 2E			
Landform (hillslope, terra	nce, etc.): <u>h</u>	illslope		Local Relief (cor	ncave, convex, n	none):	concave		Slope (%): <u>1</u>	-3%
Subregion (LLR):	<u>A</u>		Lat:		Long	:	Datum:			
Soil Map Unit Name:	Kapaosin gravelly	loam 0-6% sl	opes		N	WI Classification:	none			
Are climatic/hydrologic co	onditions on the si	te typical for	this time of year?		✓ Yes	☐ No	(if no, explain	in Remarks.)		
Are Vegetation	Soil Hye	drology	significantly distu	rbed?	Are "normal o	circumstances" pr	esent?	✓	Yes No	
Are Vegetation	Soil Hyd	drology	naturally problem	natic?	(if needed, ex	plain any answer	s in Remarks.)			
SUMMARY OF FINDI				_						
Hydrophytic Vegetation P Hydric Soil Present? Weltand Hydrology Prese	Ì	Yes ✓ Yes ✓ Yes ✓	No No No	Is the sampled a Wetland?	area within a	Yes V N	lo			
Remarks:										
VEGETATION - Use s	cientific names	of plants.	Absolute %	Dominant	Indicator					
Tree Stratum_			Cover	Species?	Status	Dominance Tes	t Worksheet:			
1. Big-leaf Maple (Acer n	nacrophyllum)	•	100	yes	FACU	Number of dom	inant Species			
2.		,				That are OBL, F	ACW, or FAC:		0	(A)
<i>3. 4.</i>		,				Total Number o	f Dominant			
4.			100	= Total Cover		=	oss All Strata:		3	(B)
Sapling/Shurb Stratum		-	200	_		Species / tel	000 / III 0 ti atai			(2)
1. Bitter Cherry (Prunus e	emarginata)		20	yes	FACU	Percent of dom	•			
2.					_	That are OBL, F	ACW, or FAC:		0	(A/B)
<i>3. 4.</i>					_	Prevalence Inde	v Worksheet			
5 .					_	Total % C		Multiply by:		
			20	= Total Cover		OBL Species		x 1 =	0	
<u>Herb Stratum</u>		_		_		FACW Species		x 2 =	0	
1. Sword Fern (Polystichu			20	no	FACU	FAC Species		x 3 =	0	
 English Ivy (Hedera he . 	iix)	,	100	yes	UPL	FACU Species UPL Species	140	x 4 =	560 500	
4.						Column Totals:	240	(A)	1060	(B)
5.]				
<i>6.</i>						Pre	valence Index	= B/A =	4.42	
<i>7. 8.</i>		,				 Hydrophytic Ve _i	getation Indica	tors:		
9.		,				1 - Rapid Te			n	
10.						2 - Dominar				
11.							ice Index is ≤3.0			
		_	120	= Total Cover		4 - Morphol	-		supporting da	ata in
Woody Vine Stratum							on a separate s			
1. 2.		,					Non-Vascular drophytic Vege		n)	
- -		,	0	= Total Cover		1.				
% Bare Ground i	n Herb Stratum	0%		•		¹ Indicators of hy unless disturbed		-	ogy must be p	resent,
	_									
Remarks:						Hydropnytic	Vegetation Pre	sentr	Yes 🗸 N	No
						1				

Depth	Matr	İX	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/2	100					loam	
			,		1			
					1			
					•			
			_		^			
			-		^			
¹ Type: C=Concentration	n D-Denletion RM-	Reduced Ma	triv CS-Covered or C	Coated Sand Grai	ins ² Location	: PL=Pore Linir	na M-Matriy	
				Coated Salid Gra	ilis. Location.	. FL-FOIE LIIII		2 11 1. 2 1. 3
Hydric Soil Indicators:	(Applicable to all Li	KKS, unless o	tnerwise noted.)				indicators for i	Problematic Hydric Soils ³ :
Uliation (A1)			Cond. Doday (CE)				☐ 2 ana N4ala	(440)
Histisol (A1)	2)	\vdash	Sandy Redox (S5)	-1			2 cm Muck	
Histic Epipedon (A	2)		Stripped Matrix (S6					t Material (TF2)
Black Histic (A3)	>		Loamy Mucky Mine		MLRA 1)		_	ow Dard Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed Mat	rix (F2)			Other (Exp	lain in Remarks)
Depleted Below Da	ark Surface (A11)		Depleted Matrix (F.	3)				
	(A12)		Redox Dark Surface	e (F6)			³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Mine	eral (S1)		Depleted Dark Surf	ace (F7)			hydrology mus	t be present, unless disturbed or
Sandy Gleyed Mati	rix (S4)		Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pr	esent):			H	ydric Soil Preser	ıt?		
Тур	e:							□ Vos. □ No.
Depth (inches	s):							☐ Yes ✓ No
Remarks:					1			
nemans.								
LIVEROLOCY								
HYDROLOGY								
Wetland Hydrology In								
Primary Indicators (min	nimum of one requir	red; check all	that apply)				Secondary Indi	cators (2 or more required)
								() (
Surface Water (A1				Leaves (B9) (exc	ept MLRA			ned Leaves (B9) (MLRA
High Water Table ((A2)		1, 2, 4A, and 4				1, 2, 4A, a	-
✓ Saturation (A3)			Salt Crust (B11)					atterns (B10)
Water Marks (B1)			Aquatic Inverte					n Water Table (C2)
Sediment Deposits			Hydrogen Sulfi					Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizo	spheres along Liv	ving Roots (C3)			ic Position (D2)
Algal Mat or Crust	(B4)		Presence of Re	duction Iron (C4))		Shallow Aq	juitard (D3)
Iron Deposits (B5)			Recent Iron Rec	duction Tilled So	ils (C6)		FAC-Neutra	al Test (D5)
Surface Soil Cracks	(B6)		Stunted or Stre	essed Plants (D1)	(LRR A)		Raised Ant	Mounds (D6) (LRR A)
☐ Inundation Visible	on Aerial Imagery (E	37)	Other (Explain	in Remarks)			Frost-Heav	re Hummocks (D7)
Sparsely Vegetated	d Concave Surface (E	38)						
Field Observations:				Wetla	nd Hydrology Pr	esent?		
Surface Water Present	? \ \ \ \ \ \ \ \ \ Yes	√ No	Depth (inches):]			
Water Table Present?	☐ Yes	√ No	Depth (inches):					✓ Yes No
Saturation Present?	✓ Yes		Depth (inches):	12	•			
(includes capillary fring			' ' ' -		•			
Describe Recorded Dat		onitoring wel	I. aerial photos, prev	ious inspections), if available:			
	(88-,		, p, p		,,			
Remarks:								

Project/Site:	Port Gamble Redevelopment F	Plan	City/County:	Kitsap Count	У	Sampling Date: 6	5/18/2012
Applicant/Owner:	Pope Resources			_ State	:: <u>W</u> A	Sampling Point: SP	P-25
Investigator(s):	J. Dadisman, T. Bannister		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E		
Landform (hillslope, terra	ace, etc.): Depression		Local Relief (con	icave, convex, r	none): concave	Slope (%):	0
Subregion (LLR):	Α	Lat:		Long	: Datum:		
Soil Map Unit Name:	Kapaosin gravelly loam, 0-6% s	slopes		_ N	WI Classification: none		
Are climatic/hydrologic o	conditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain	in Remarks.)	
Are Vegetation	Soil Hydrology	significantly distu	bed?	Are "normal	circumstances" present?	✓ Yes No	
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FIND							
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	✓ Yes 🗌	No No No	Is the sampled a Wetland?	irea within a	✓ Yes No		
Remarks:							
	scientific names of plants.						
Tree Stratum	scientific flames of plants.	Absolute %	Dominant	Indicator	Dominance Test Worksheet:		
1		Cover	Species?	Status	Number of dominant Species		
<u>1.</u> 2.					That are OBL, FACW, or FAC:	2	(A)
3.	·			_	That are obe, thew, or the		(71)
4.					Total Number of Dominant		
		0	= Total Cover		Species Across All Strata:	3	(B)
Sapling/Shurb Stratum	-		-		·		, ,
1. Himalayan Blackberry	(Rubus armeniacus)	5	yes	FACU	Percent of dominant Species		
2.					That are OBL, FACW, or FAC:	66.6666667	(A/B)
<i>3</i> .				_			
4.					Prevalence Index Worksheet:		
5.					Total % Cover of:	Multiply by:	
	<u>-</u>	5	= Total Cover		OBL Species	x 1 = 0	
Herb Stratum 1. Creeping Buttercup (R	- Panunculus ranansi	80	VOS	FAC	FACW Species FAC Species	$\begin{array}{c} x 2 = & 0 \\ x 3 = & 0 \end{array}$	
2. Velvet Grass (Holcus I	• • •	20	yes	FAC	FACU Species	$x = \frac{x - x}{x + 4} = \frac{0}{0}$	
3.	unutusy	20	yes	TAC	UPL Species	x5 = 0	
4.					Column Totals:	(A) 0	(B)
5.							()
6.					Prevalence Index	= B/A = #DIV/0!	
7.							
8.					Hydrophytic Vegetation Indica		
9.					1 - Rapid Test for Hydroph		
10.				_	2 - Dominance Test is >50		
11.			<u> </u>	-	3 - Prevalence Index is ≤3.		
Woody Vine Stratum	-	100	= Total Cover		Remarks or on a separate		ta in
1. 2.				_	5 - Wetland Non-Vascular Problem Hydrophytic Veg		
<u> </u>		0	= Total Cover		7.		
% Bare Ground	in Herb Stratum0%		- 13(4) 60761		¹ Indicators of hydric soil and v unless disturbed or problemat		esent,
Remarks:					Hydrophytic Vegetation Pre	esent?	0

Depth	Matri	(Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 4/1	100					loam	
6-16	10YR 3/2	95	10YR 4/6	5	С		loam	
							·	
¹ Type: C=Concentratio	n D-Donlotion PM I	Poducod Ma	atrix CS=Covered or I	Coated Sand Gra	ins ² Location	PL=Pore Lini	ag M-Matrix	
	•			coated Sand Gra	ilis. Location.	FL-FOIE LIIII		
Hydric Soil Indicators:	(Applicable to all LK	ks, uniess c	otnerwise noted.)				indicators for F	Problematic Hydric Soils ³ :
□ 11:-t:1 (A4)			1 c				□ 2 N4I	(440)
Histisol (A1)	2)	<u> </u>	Sandy Redox (S5)	~\			2 cm Muck	
Histic Epipedon (A	12)		Stripped Matrix (Se					Material (TF2)
Black Histic (A3)	(a . a)		Loamy Mucky Mine		MLRA 1)			w Dard Surface (TF12)
Hydrogen Sulfide	(A4)		Loamy Gleyed Mat				Other (Expl	lain in Remarks)
Depleted Below D	ark Surface (A11)		Depleted Matrix (F	3)				
Thick Dark Surface	e (A12)	~	Redox Dark Surface				³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Mine	eral (S1)		Depleted Dark Surf	face (F7)			hydrology must	t be present, unless disturbed or
Sandy Gleyed Mat	rix (S4)		Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pr	resent):			H	ydric Soil Preser	t?		
Тур	e:							✓ Yes □ No
Depth (inche	s):							✓ Yes No
Remarks:					ı			
HYDROLOGY								
Wetland Hydrology In	dicators:							
Primary Indicators (mi	nimum of one require	ed; check al	l that apply)				Secondary India	cators (2 or more required)
Surface Water (A1	•		☐ Water-Stained	Leaves (B9) (exc	ept MLRA		Water-Stair	ned Leaves (B9) (MLRA
✓ High Water Table	(A2)		1, 2, 4A, and 4	IB)			1, 2, 4A, aı	nd 4B)
✓ Saturation (A3)			Salt Crust (B11)			☐ Drainage Pa	atterns (B10)
Water Marks (B1)			Aquatic Inverte	ebrates (B13)			Dry-Season	Water Table (C2)
Sediment Deposits	s (B2)		Hydrogen Sulfi	de Odor (C1)			Saturated \	/isible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizo	spheres along Liv	ving Roots (C3)		Geomorphi	ic Position (D2)
Algal Mat or Crust	: (B4)		Presence of Re	duction Iron (C4)		Shallow Aq	uitard (D3)
Iron Deposits (B5)			Recent Iron Re	duction Tilled So	oils (C6)		FAC-Neutra	
Surface Soil Cracks			Stunted or Stre	essed Plants (D1)	(LRR A)			Mounds (D6) (LRR A)
	on Aerial Imagery (B	7)	Other (Explain		•			e Hummocks (D7)
	d Concave Surface (B		_ ` ` '	,			_	,
Field Observations:	,	,		Wetla	nd Hydrology Pr	esent?		
Surface Water Present	? Tes	✓ No	Depth (inches):]			
Water Table Present?	✓ Yes	∏ No	Depth (inches):	6	•			✓ Yes No
Saturation Present?	√ Yes	☐ No	Depth (inches):	0	•			
(includes capillary fring					•			
Describe Recorded Da		nitoring we	II. aerial photos, prev	vious inspections), if available:			
2000.1201.0001.000	ta (oti cam gaage) me		, aca. p c . c .		,, a raa			
Remarks:								

Project/Site:	Port Gamble Redevelopment P	lan	City/County:	Kitsap Count	У	Sampling	Date: 6/18/201
Applicant/Owner:	Pope Resources			_ State	:: <u>W</u> A	Sampling	Point: SP-26
Investigator(s):	J. Dadisman, T. Bannister		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E		
Landform (hillslope, terra	ace, etc.): Hillslope	_	Local Relief (con	icave, convex, r	none): None	Slop	oe (%): <u>1-3%</u>
Subregion (LLR):	<u>A</u>	Lat:		Long	: Datum:		
Soil Map Unit Name:	Kapaosin gravelly loam, 6-15%	slopes		_ N	WI Classification: none		
Are climatic/hydrologic co	onditions on the site typical for	this time of year?		✓ Yes	☐ No (if no, explain	in Remarks.)	
Are Vegetation	Soil Hydrology	significantly distu	bed?	Are "normal	circumstances" present?	✓ Yes	☐ No
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FINDI						_	
Hydrophytic Vegetation F Hydric Soil Present? Weltand Hydrology Prese	✓ Yes 🗌	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No		
Remarks:							
VEGETATION - Use s	cientific names of plants.						
Tree Stratum		Absolute %	Dominant	Indicator	Dominance Test Worksheet:		
	, , , , , , , , , , , , , , , , , , ,	Cover	Species?	Status	4		
 Big-leaf Maple (Acer n Western Red Cedar (Tl 		100 25	yes	FACU FAC	Number of dominant Species That are OBL, FACW, or FAC:	4	(A
3.	пији рпсисиј	23	yes	TAC	That are obt, racw, or rac.		(<i>F</i>
4.					Total Number of Dominant		
		125	= Total Cover	-	Species Across All Strata:	5	(E
Sapling/Shurb Stratum	-	-	•				
1. Salmonberry (Rubus s	pectabilis)	50	yes	FAC	Percent of dominant Species		
2.					That are OBL, FACW, or FAC:	80	(A/E
3.							
4.				_	Prevalence Index Worksheet:		
5.	,			_	Total % Cover of:	Multiply by:	
	_	50	= Total Cover		OBL Species	x 1 =	0
Herb Stratum	-it	70		ODI	FACW Species	x 2 =	0
1. Skunk Cabbage (Lysich 2. Lady Fern (Athyrium fi		70 50	yes	OBL FAC	FAC Species FACU Species	x 3 =	0
3. Field Horsetail (Equise		10	yes no	FAC	UPL Species	x 4 =	0
4.	tum urvense,	10	110	1710	Column Totals:	(A)	0 (B)
5.						()	
6.	,			_	Prevalence Index	= B/A =	
7.							
8.					Hydrophytic Vegetation Indica	itors:	
9.				_	1 - Rapid Test for Hydroph		
10.					2 - Dominance Test is >50		
11.					3 - Prevalence Index is ≤3.		
Woody Vine Stratum	-	130	= Total Cover		4 - Morphological Adaptate Remarks or on a separate s		orting data in
1.					5 - Wetland Non-Vascular		
2.	,	0	= Total Cover	-	Problem Hydrophytic Veg		
% Bare Ground i	n Herb Stratum0%	U	– rotal cover		¹ Indicators of hydric soil and wunless disturbed or problemat		ust be present,
Remarks:					Hydrophytic Vegetation Pre	esent?	s No

Depth	Matri	X	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	2.5Y 2.5/1	100					sandy loam	
	_				-			
			<u> </u>					
	<u> </u>							
					-			
					-			
			_,		-1			
¹ Type: C=Concentratio	n. D=Depletion. RM-	Reduced Ma	trix. CS=Covered or 0	Coated Sand Gra	ins. ² Location:	PL=Pore Linir	ng. M=Matrix	
Hydric Soil Indicators:	•							roblematic Hydric Soils ³ :
Histisol (A1)			Sandy Redox (S5)				2 cm Muck	(A10)
Histic Epipedon (A	.2)		Stripped Matrix (S6	5)			Red Parent	Material (TF2)
Black Histic (A3)	,	<u> </u>	Loamy Mucky Mine		MLRA 1)			w Dard Surface (TF12)
✓ Hydrogen Sulfide ((44)	—	Loamy Gleyed Mat				_	ain in Remarks)
		<u> </u>					Other (Expir	ani ni nemarks)
Depleted Below Da	• •	L	Depleted Matrix (F.				3. u · · · ·	
Thick Dark Surface			Redox Dark Surface					ydrophytic vegetation and wetland
Sandy Mucky Mine	eral (S1)		Depleted Dark Surf	ace (F7)			hydrology must	be present, unless disturbed or
Sandy Gleyed Mat	rix (S4)		Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pr					lydric Soil Presen	t?	•	
Тур					ĺ			
Depth (inches								✓ Yes No
Remarks:								
HYDROLOGY								
Wetland Hydrology In								
Primary Indicators (mi	nimum of one requir	ed; check al	l that apply)				Secondary Indic	cators (2 or more required)
Surface Water (A1	.)		☐ Water-Stained	Leaves (B9) (exc	cept MLRA			ned Leaves (B9) (MLRA
High Water Table	(A2)		1, 2, 4A, and 4	IB)			1, 2, 4A, ar	nd 4B)
Saturation (A3)			Salt Crust (B11))				atterns (B10)
Water Marks (B1)			Aquatic Inverte					Water Table (C2)
Sediment Deposits	s (B2)		✓ Hydrogen Sulfie					isible on Aerial Imagery (C9)
Drift Deposits (B3)				spheres along Li	ving Poots (C2)			c Position (D2)
Algal Mat or Crust				duction Iron (C4			Shallow Aqu	
Iron Deposits (B5)				duction Tilled Sc			FAC-Neutra	
Surface Soil Cracks	• •		Stunted or Stre	essed Plants (D1)) (LRR A)		Raised Ant	Mounds (D6) (LRR A)
Inundation Visible	on Aerial Imagery (B	7)	U Other (Explain	in Remarks)			Frost-Heave	e Hummocks (D7)
Sparsely Vegetated	d Concave Surface (B	8)						
Field Observations:				Wetla	ind Hydrology Pr	esent?		
Surface Water Present	? Tyes	✓ No	Depth (inches):]			
Water Table Present?	✓ Yes	□ No	Depth (inches):	4	-		1	✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):	2	-		ı	
			Deput (miches).		-			
(includes capillary fring Describe Recorded Date		ni+a=!== ::		doug leases -+! -	\ if available:			
Describe Recorded Dat	ta (Stream gauge, mo	mitoring we	ii, aeriai priotos, prev	nous inspections	oj, ii avallable:			
Remarks:								

Project/Site:	Port Gamble Red	evelopment I	Plan	City/County:	Kitsap County			Sampling Date: 6/18/2012	
Applicant/Owner:	Pope Resources				State	: <u>W</u> A	!	Sampling Point: <u>S</u>	SP-27
Investigator(s):	J. Dadisman, T. Ba	annister		Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2	<u> </u>		
Landform (hillslope, terr	ace, etc.): <u>h</u>	illslope		Local Relief (con	icave, convex, r	none): None		Slope (%): <u>1</u>	L-3%
Subregion (LLR):	Α		Lat:		Long	: Da	tum:		
Soil Map Unit Name:	Kapaosin gravelly	loam, 0-6%	slopes		_ N	WI Classification: none			
Are climatic/hydrologic o	conditions on the si	te typical for	this time of year?		✓ Yes	☐ No (if no, ex	plain in Remark	s.)	
Are	Soil Hy	drology	significantly distu	rbed?	Are "normal	circumstances" present?		✓ Yes No	
Are Vegetation	Soil Hy	drology	naturally problem	atic?	(if needed, ex	xplain any answers in Rema	rks.)		
SUMMARY OF FIND									
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres		Yes ✓ Yes ✓ Yes ✓	No	Is the sampled a Wetland?	rea within a	Yes V No			
Remarks:									
VEGETATION - Use s	scientific names	of plants.							
Tree Stratum			Absolute %	Dominant	Indicator	Dominance Test Worksh	eet:		
1. Big-leaf Maple (Acer I	macronhyllum)		Cover 100	Species?	Status FACU	4			
2. Western Red Cedar (1			100	yes	FAC	Number of dominant Spe That are OBL, FACW, or F		1	(A)
3.	паја рпсаса,			, , , ,					(* ')
4.					_	Total Number of Domina	nt		
			200	= Total Cover		Species Across All St	ata:	5	(B)
Sapling/Shurb Stratum	_								
1. Bitter Cherry (Prunus			25	yes	FACU	Percent of dominant Spe			
2. Red Huckleberry (Vac		<u>) </u>	10	no	UPL	That are OBL, FACW, or F	AC:	20	(A/B)
3. Snowberry (Symphori	carpos albus)		20	yes	FACU	Duning laws a landou Manhah			
<i>4.</i> <i>5.</i>						Prevalence Index Worksh Total % Cover of:		h	
<i>5.</i>			55	= Total Cover	<u>.</u>	OBL Species	Multiply l	0 O	
Herb Stratum		-	33	- Total Cover		FACW Species	x 2 =	0	
1. Sword Fern (Polystich	um munitum)		50	yes	FACU	FAC Species	100 x 3 =	300	
2.	, , , , , , , , , , , , , , , , , , ,				-	FACU Species	195 x 4 =	780	
3.					_	UPL Species	10 x 5 =	50	
4.						Column Totals:	305 (A)	1130	(B)
5.					_			-	
6.					_	Prevalence I	idex = B/A =	3.70	
7.						4			
8.					<u>.</u>	Hydrophytic Vegetation I			
<i>9.</i> 10.					-	1 - Rapid Test for Hyd		ation	
11.					_	3 - Prevalence Index			
11.				Total Caver	-				-4- :
Woody Vine Stratum		-	50	= Total Cover		4 - Morphological Ad Remarks or on a sepa	rate sheet.	nae supporting a	ata in
1.					_	5 - Wetland Non-Vas			
2.						Problem Hydrophytic	Vegetation (Ex	plain)	
% Bare Ground	in Herb Stratum <u><</u>	:5%	0	= Total Cover		¹ Indicators of hydric soil a unless disturbed or probl		Irology must be p	resent,
Remarks:						Hydrophytic Vegetatio	n Present?	☐ Yes ✓ 「	No

Depth	Matrix	(Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 4/3	100					sandy loam	
1	<u> </u>							
¹ Type: C=Concentration,	D=Depletion, RM-F	Reduced Ma	atrix, CS=Covered or (Coated Sand Gra	ins. ² Location:	PL=Pore Linir		
Hydric Soil Indicators: (A	Applicable to all LR	Rs, unless o	otherwise noted.)				Indicators for Pro	oblematic Hydric Soils ³ :
Histisol (A1)		Г	Sandy Redox (S5)				2 cm Muck (A	A10)
Histic Epipedon (A2)			Stripped Matrix (Se	5)			Red Parent M	•
Black Histic (A3)			Loamy Mucky Mine	•	MLRA 1)			Dard Surface (TF12)
Hydrogen Sulfide (A	4)		Loamy Gleyed Mat		- ,		_	n in Remarks)
Depleted Below Dark			Depleted Matrix (F					······································
Thick Dark Surface (A	• •	<u> </u>	Redox Dark Surface	•			³ Indicators of hyd	drophytic vegetation and wetland
Sandy Mucky Minera	•	<u> </u>	Depleted Dark Surface	` '			·	be present, unless disturbed or
Sandy Midcky Miller		<u> </u>	Redox Depressions				problematic.	be present, unless disturbed of
Restrictive Layer (if pres					ydric Soil Presen	+2	рговієнаціс.	
Type:	<u>-</u>			"	 	· ·	_	_
Depth (inches):								Yes ✓ No
Remarks:								
HYDROLOGY								
Wetland Hydrology Indi								
Primary Indicators (mini	mum of one require	ed; check al	I that apply)				Secondary Indica	tors (2 or more required)
Comfo oo Motor (A.1)			□ Mateu Cteined	L (DO) /	ant MIDA		□ Mates Steine	d Lagrage (DO) (BALDA
Surface Water (A1)	2)			Leaves (B9) (exc	ept IVILKA			ed Leaves (B9) (MLRA
High Water Table (A	.2)		1, 2, 4A, and 4				1, 2, 4A, and	-
Saturation (A3)			Salt Crust (B11				Drainage Pat	
Water Marks (B1)	DO)		Aquatic Inverte					Vater Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfi	, ,				sible on Aerial Imagery (C9)
Drift Deposits (B3)				spheres along Liv			Geomorphic	·
Algal Mat or Crust (E	34)			duction Iron (C4			Shallow Aqui	
Iron Deposits (B5)			=	duction Tilled So	• •		FAC-Neutral	
Surface Soil Cracks (essed Plants (D1)	(LRR A)		Raised Ant M	lounds (D6) (LRR A)
Inundation Visible or			U Other (Explain	in Remarks)			Frost-Heave	Hummocks (D7)
Sparsely Vegetated (Concave Surface (B	3)						
Field Observations:	_	_		Wetla	nd Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):				_	
Water Table Present?	Yes	✓ No	Depth (inches):				L	」Yes ✓ No
	Yes	✓ No	Depth (inches):		.]			
Saturation Present?					•			
(includes capillary fringe)							
)	nitoring we	II, aerial photos, prev	rious inspections), if available:			
(includes capillary fringe Describe Recorded Data)	nitoring we	II, aerial photos, prev	rious inspections), if available:			
(includes capillary fringe)	nitoring we	II, aerial photos, prev	ious inspections), if available:			

Project/Site:	Port Gamble Re	edevelopmer	nt Plan	_ City/County:	Kitsap County	<u>/</u>	Sampling Date: 11/19/201		
Applicant/Owner:	Pope Resource	S			State	: <u>W</u> A	Sampling Point: SP-28		
Investigator(s):	J. Dadisman, D.	. Conlin		_ Section/Townsh	ip/Range:	Sec 7 Town 27N Range 2E			
Landform (hillslope, terra	ace, etc.):	Hillslope		Local Relief (con	cave, convex, r	none): <u>none</u>	Slope (%): <u><2%</u>		
Subregion (LLR):	Α		Lat	:	_ Long	: Datum:	·		
Soil Map Unit Name:	Kitsap silt loam	n, 8-15% slope	es		_ N	WI Classification: none			
Are climatic/hydrologic c	onditions on the	e site typical f	or this time of year	?	✓ Yes	☐ No (if no, explain	n in Remarks.)		
Are Vegetation	Soil	Hydrology	significantly distu	urbed?	Are "normal o	circumstances" present?	✓ Yes No		
Are Vegetation	Soil	Hydrology	naturally probler	natic?	(if needed, ex	xplain any answers in Remarks.)		
SUMMARY OF FIND	INGS								
Hydrophytic Vegetation I Hydric Soil Present? Weltand Hydrology Prese		✓ Yes ✓ Yes ✓ Yes	No No No	Is the sampled a Wetland?	rea within a	✓ Yes No			
Remarks:									
VEGETATION - Use s	cientific nam	es of nlant	ts						
Tree Stratum	eremente mani	ics of plant	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:			
1.			Cover	Speciesr	Status	Number of dominant Species			
2.						That are OBL, FACW, or FAC:	2 (A)		
3.									
4.				= Total Cover		Total Number of Dominant	2 (B)		
Sapling/Shurb Stratum				_ = Total Cover		Species Across All Strata:	Z (B)		
1.						Percent of dominant Species			
2.				_		That are OBL, FACW, or FAC:	(A/B)		
3.			_	_		Duning law and the Maria laborate			
<i>4.</i> <i>5.</i>				_	-	Prevalence Index Worksheet: Total % Cover of:	Multiply by:		
<u>J.</u>			0	= Total Cover		OBL Species	x 1 = 0		
Herb Stratum				_		FACW Species	x 2 = 0		
1. Soft Rush (Juncus effu			20	yes	FACW	FAC Species	x 3 = 0		
2. Creeping Buttercup (R 3. Field Horsetail (Equise		ns)		yes	FACW FAC	FACU Species UPL Species	-		
4. Misc. grasses	tum arvense)		10	no no	FAC	Column Totals:			
5.					-				
6.						Prevalence Index	c = B/A =		
7.				_	-		-t		
<i>8.</i> <i>9.</i>				_		Hydrophytic Vegetation Indic 1 - Rapid Test for Hydrop			
10.				-		2 - Dominance Test is >50			
11.						3 - Prevalence Index is ≤3	.0 ¹		
			95	= Total Cover	-	4 - Morphological Adapta	ations ¹ (provide supporting data in		
Woody Vine Stratum						Remarks or on a separate			
1.					_	5 - Wetland Non-Vascula			
2.				= Total Cover	-	Problem Hydrophytic Veg	getation (Explain)		
			·	TOTAL COVER		•	wetland hydrology must be present,		
% Bare Ground	ın Herb Stratum	0	<u>%</u>			unless disturbed or problema	itic.		
Remarks:						Hydrophytic Vegetation Pr	esent?		
						-			

Depth	Matri	х	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-11	10YR 2/1	100					loam	
11-16	10Y 3/1	95	10YR 3/4	5	С С	М	loam	
¹ Type: C=Concentration	, D=Depletion, RM-	Reduced Ma	atrix, CS=Covered or C	oated Sand G	irains. ² Location:	PL=Pore Linii	ng, M=Matrix	
Hydric Soil Indicators: (·							Problematic Hydric Soils ³ :
(,	,					,
☐ Histisol (A1)			Sandy Redox (S5)				2 cm Muc	k (A10)
Histic Epipedon (A2)		Stripped Matrix (S6))				t Material (TF2)
Black Histic (A3)	•		Loamy Mucky Mine		pt MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	4)		Loamy Gleyed Matr		,			olain in Remarks)
Depleted Below Dar	•		Depleted Matrix (F3					•
Thick Dark Surface (Redox Dark Surface	-			³ Indicators of	hydrophytic vegetation and wetland
Sandy Mucky Miner	•		Depleted Dark Surfa					st be present, unless disturbed or
Sandy Gleyed Matri			Redox Depressions				problematic.	
Restrictive Layer (if pre			redox Bepressions	(1.0)	Hydric Soil Presen	t?	problematic	
Type								
Depth (inches)								✓ Yes No
Remarks:								
HYDROLOGY	ientore							
Wetland Hydrology Ind Primary Indicators (min		ed; check al	l that apply)				Secondary Ind	icators (2 or more required)
Comfore Mater (A1)			N/oton Ctoined I	(DO) / -	NALDA		□ Mateur Che	inad Lagues (DO) (BALDA
Surface Water (A1)	12)		Water-Stained I		except IVILKA			ined Leaves (B9) (MLRA
✓ High Water Table (A ✓ Saturation (A3)	42)		1, 2, 4A, and 4 Salt Crust (B11)	P)			1, 2, 4A, a	Patterns (B10)
✓ Saturation (A3) ✓ Water Marks (B1)			Aquatic Invertel	hratos (P12)				n Water Table (C2)
Sediment Deposits	(02)		✓ Hydrogen Sulfid					Visible on Aerial Imagery (C9)
Drift Deposits (B3)	(62)				Living Roots (C3)			nic Position (D2)
Algal Mat or Crust (D4)		Presence of Rec	-			= :	quitard (D3)
Iron Deposits (B5)	D4)		Recent Iron Red					ral Test (D5)
Surface Soil Cracks	(BE)		Stunted or Stres				=	t Mounds (D6) (LRR A)
Inundation Visible of		7)	Other (Explain i)1) (LKK A)			ve Hummocks (D7)
Sparsely Vegetated				ii Keillaiks)				ve Hullillocks (D7)
Field Observations:	Concave Surface (D	0)		\M/et	tland Hydrology Pro	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):	wei	lianu riyurology Fit	esent:		
Water Table Present?	✓ Yes	No No	Depth (inches):		0			✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):		0			
(includes capillary fringe					<u>~</u> [
Describe Recorded Data		nitoring we	ll, aerial photos, previ	ous inspectio	ns), if available:			
	(-3. 50 60086) 1110		, p, p	peccio	,,			
Remarks:								

Project/Site:	Port Gamble Redeve	elopment I	Plan	City/County:	Kitsap County				ampling Date:	8/13/2012
Applicant/Owner:	Pope Resources				State	: <u>W</u> A		Sa	mpling Point: S	SP-29
Investigator(s):	I. Dadisman, L. Bern	ntsen		Section/Townsh	nip/Range:	Sec 6 Town 27N Rang	e 2E			
Landform (hillslope, terrac	e, etc.): <u>De</u> r	oression		Local Relief (con	ncave, convex, r	none): <u>Conc</u>	ave		Slope (%): <u>0</u>)-1%
Subregion (LLR):	Δ		Lat:		_ Long	;:	Datum:			
Soil Map Unit Name:	Kapaosin gravelly lo	am, 6-15%	ś slopes		_ N	WI Classification: None	!			
Are climatic/hydrologic co	nditions on the site	typical for	this time of year?		✓ Yes	☐ No (if no	, explain	in Remarks.)	
Are Vegetation	Soil Hydro	ology	significantly distu	rbed?	Are "normal	circumstances" present	?	[✓ Yes No	
Are Vegetation	Soil Hydro	ology	naturally problem	atic?	(if needed, ex	kplain any answers in Re	emarks.)			
SUMMARY OF FINDIN										
Hydrophytic Vegetation Pr Hydric Soil Present? Weltand Hydrology Presen		Yes ✓ Yes ✓ Yes ✓	No	Is the sampled a Wetland?	area within a	Yes V No				
Remarks:										
	: - : : :	ef salasata								
VEGETATION - Use sc Tree Stratum	ientific names o	n piants.	Absolute %	Dominant	Indicator	Dominance Test Wor	ksheet:			
			Cover	Species?	Status					
<u>1.</u> 2.						Number of dominant That are OBL, FACW,	•		1	(A)
3.						That are obt, racw,	or rac.	-		(^)
4.						Total Number of Dom	inant			
			0	= Total Cover		Species Across Al			2	(B)
Sapling/Shurb Stratum		-		•					_	(-)
1.						Percent of dominant	Species			
2.						That are OBL, FACW,	or FAC:		50	(A/B)
<i>3</i> .								•		
4.						Prevalence Index Wor				
<i>5</i> .						Total % Cover of	of:	Multiply by		
		-	0	= Total Cover		OBL Species		x 1 =	0	
Herb Stratum			10		FAC	FACW Species	10	x 2 =	0	
1. Creeping Buttercup (Ra 2. Red Clover (Trifolium pr			10	yes	FAC FACU	FAC Species FACU Species		x 3 =	30 80	
3. Common Dandelion (Ta)	5	yes no	FACU	UPL Species	20	x 4	0	
4. Ox-Eye Daisy (Leucanth			5	no	FACU	Column Totals:	30	(A)	110	(B)
5. Mowed Grass	-		85					(,		(-/
6.					_	Prevalen	ce Index =	= B/A =	3.67	
7.										
8.						Hydrophytic Vegetation				
9.						1 - Rapid Test for			ion	
10.						2 - Dominance Te				
11.						3 - Prevalence Inc				
Woody Vine Stratum115			115	= Total Cover		4 - Morphological	-		de supporting da	ata in
1.						5 - Wetland Non-				
2.						Problem Hydroph	ytic Vege	etation (Expl	ain)	
			0	= Total Cover		¹ Indicators of hydric s	oil and w	etland hydr	ology must be p	resent,
% Bare Ground in	Herb Stratum	0%				unless disturbed or pr			·	•
Remarks:						Hydrophytic Vegeta	ation Pre	sent?	Yes 🗸 I	No

Depth	Matr	İX	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/2	100					sandy loam	
	7.1							
¹ Type: C=Concentratio	n D-Denletion RM.	Reduced Ma	etrix CS=Covered or C	Coated Sand Grai	ins ² Location	: PL=Pore Linir	ag M-Matriy	
	•			coatea Sana Gra	iris. Locationi	T L-I OIC LIIII		mahlamatia Ukuduia Caila³.
Hydric Soil Indicators:	(Applicable to all Li	kks, uniess o	tnerwise noted.)				indicators for P	roblematic Hydric Soils ³ :
☐ Histian (A1)			Candy Daday (CE)				2 cm Muck	(410)
Histisol (A1)	2)	<u> </u>	Sandy Redox (S5)	-1				
Histic Epipedon (A	۷)	<u> </u>	Stripped Matrix (S6		B41 D A 4 \			Material (TF2)
Black Histic (A3)			Loamy Mucky Mine		IVILKA 1)			w Dard Surface (TF12)
Hydrogen Sulfide (Loamy Gleyed Mat				U Other (Expl	ain in Remarks)
Depleted Below Da	ark Surface (A11)	_	Depleted Matrix (F	•			j.	
Thick Dark Surface			Redox Dark Surface	· ·				ydrophytic vegetation and wetland
Sandy Mucky Mine	eral (S1)		Depleted Dark Surf	ace (F7)			hydrology must	be present, unless disturbed or
Sandy Gleyed Mat	rix (S4)		Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pr	esent):			Hy	ydric Soil Presen	ıt?		
Тур	e:							☐ Yes ✓ No
Depth (inches	s):							les V No
Remarks:					•			
HYDROLOGY								
	d:							
Wetland Hydrology In			1 4 h a 4 a m m l . ·\				Ca aa mala muulmali a	natara (2 an manua manuimad)
Primary Indicators (mi	nimum of one requi	rea; check an	that apply)				Secondary indic	ators (2 or more required)
Comfo on Motor (A1	`		□ Mateu Cteined	Lagues (DO) (gue	and MALDA		□ Matau Ctain	and Lagres (DO) (BALDA
Surface Water (A1				Leaves (B9) (exc	ept iviLKA			ned Leaves (B9) (MLRA
High Water Table	(A2)		1, 2, 4A, and 4				1, 2, 4A, an	
Saturation (A3)			Salt Crust (B11)					atterns (B10)
Water Marks (B1)	4		Aquatic Inverte					Water Table (C2)
Sediment Deposits			Hydrogen Sulfi				=	isible on Aerial Imagery (C9)
Drift Deposits (B3)				spheres along Liv				c Position (D2)
Algal Mat or Crust	(B4)		Presence of Re	duction Iron (C4))		Shallow Aqu	uitard (D3)
Iron Deposits (B5)			=	duction Tilled So	` '		FAC-Neutra	
Surface Soil Cracks	` '			essed Plants (D1)	(LRR A)		Raised Ant	Mounds (D6) (LRR A)
Inundation Visible	on Aerial Imagery (E	37)	U Other (Explain	in Remarks)			Frost-Heave	e Hummocks (D7)
Sparsely Vegetated	d Concave Surface (E	38)						
Field Observations:				Wetla	nd Hydrology Pr	esent?		
Surface Water Present	?	✓ No	Depth (inches):					_
Water Table Present?	☐ Yes	✓ No	Depth (inches):					☐ Yes ✓ No
Saturation Present?	☐ Yes	✓ No	Depth (inches):					
(includes capillary fring	ge)		_					
Describe Recorded Dat	ta (stream gauge, m	onitoring we	II, aerial photos, prev	ious inspections), if available:			
Remarks:								

Project/Site:	t/Site: Port Gamble Redevelopment			_ City/County:	Kitsap County	unty Sampling Date: 8/			3/13/2012
Applicant/Owner:	Pope Resources	5			_ State	: <u>W</u> A	Sam	npling Point: SP	·-30
Investigator(s):	J. Dadisman, L.	Berntsen		Section/Townsh	nip/Range:	Sec 7 Town 27N Range 2E			
Landform (hillslope, terra	ce, etc.):	Hillslope		Local Relief (cor	ncave, convex, r	none): Concave		Slope (%): <u>2-</u>	-4%
Subregion (LLR):	Α		_ Lat:		_ Long	: Datu	um:		
Soil Map Unit Name:	McKenna grave	lly loam			N	WI Classification: none			
Are climatic/hydrologic co	onditions on the	site typical fo	or this time of year?	,	✓ Yes	☐ No (if no, exp	olain in Remarks.)		
Are Vegetation [Soil	Hydrology	significantly distu	rbed?	Are "normal	circumstances" present?	✓	Yes No	
Are Vegetation [Soil	Hydrology	naturally problem	natic?	(if needed, ex	xplain any answers in Remar	·ks.)		
SUMMARY OF FINDI									
Hydrophytic Vegetation P Hydric Soil Present? Weltand Hydrology Prese		✓ Yes ☐ ✓ Yes ☐ ✓ Yes ☐	No No No	Is the sampled a Wetland?	area within a	✓ Yes No			
Davisadas									
Remarks:									
VEGETATION - Use so	cientific name	es of plants	Absolute %	Dominant	Indicator				
Tree Stratum			Cover	Species?	Status	Dominance Test Workshe	et:		
1. Red Alder (Alnus rubra)		15	yes	FAC	Number of dominant Spec	ies		
2. Grand Fir (Abies grand	is)		5	yes	FACU	That are OBL, FACW, or FA	AC:	5	(A)
3.					-1				
4.						Total Number of Dominan			
G 1: /GL 1 G			20	_ = Total Cover		Species Across All Stra	ata:	7	(B)
Sapling/Shurb Stratum 1. Himalayan Blackberry	(Dubus sums suis		20		FACIL	Davaget of daminant Cons	:		
2. Salmonberry (Rubus sp		icusj	30 30	yes	FACU FAC	Percent of dominant Spec That are OBL, FACW, or FA		42857143	(A/B)
3.	cetabilisy			yes		That are obe, thew, of the	71.	42037143	(//, 0)
4.			-			Prevalence Index Workshe	et:		
5.			_			Total % Cover of:	Multiply by:		
			60	= Total Cover		OBL Species	x 1 =	0	
<u>Herb Stratum</u>				_		FACW Species	x 2 =	0	
1. Lady Fern (Athyrium fil			10	yes	FAC	FAC Species	x 3 =	0	
2. Sword Fern (Polystichu			5	no	FACU	FACU Species	x 4 =	0	
3. Youth-On-Age (Tomiea 4. Water parsley (Oenant		1	10 10	yes	FAC	UPL Species	x 5 =	0	(D)
5.	ine sarmentosa)	<u> </u>		yes	OBL	Column Totals:	(A)		(B)
<u>6.</u>			_	-		Prevalence In	dex = B/A =		
7.			_				·		
8.			_			Hydrophytic Vegetation In	dicators:		
9.						1 - Rapid Test for Hyd		'n	
10.			_			2 - Dominance Test is			
11.					-1	3 - Prevalence Index is			
			35	= Total Cover		4 - Morphological Ada		supporting dat	ta in
Woody Vine Stratum						Remarks or on a separa			
1.			_			5 - Wetland Non-Vasc			
2.				·		Problem Hydrophytic	Vegetation (Explai	n)	
			0	= Total Cover		¹ Indicators of hydric soil a	nd wetland hydrol	ogy must be pr	esent,
% Bare Ground in Herb Stratum 5						unless disturbed or proble			
			- 						
Remarks:				·		Hydrophytic Vegetation	Present?	✓ Yes 🔲 N	Ю

SOIL Sampling Point: SP-30

Бери	IVIdti	X	Redox realures					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	5Y 3/2	100					loam	
4-16	5Y 4/2	90	5Y 5/6	10			fine sandy loam	
. = -								
¹ Type: C=Concentratio	n, D=Depletion, RM-I	Reduced Mat	rix, CS=Covered or C	Coated Sand Grai	ins. ² Location:	: PL=Pore Lini	ng, M=Matrix	
Hydric Soil Indicators:								olematic Hydric Soils ³ :
,	, ,,	.,	,					•
Histisol (A1)			Sandy Redox (S5)				2 cm Muck (A:	10)
Histic Epipedon (A	2)	H	Stripped Matrix (S6	5)			Red Parent Ma	
Black Histic (A3)	-,	H	Loamy Mucky Mine		MIDA 1)		_	Dard Surface (TF12)
	۸ ۵ ۱	H	· · ·		IVILINA 1)		_	
Hydrogen Sulfide (닏	Loamy Gleyed Mati				Other (Explain	iii keiiiarks)
Depleted Below Da	ark Surface (A11)	<u> </u>	Depleted Matrix (F	3)			j.	
Thick Dark Surface	(A12)		Redox Dark Surface	e (F6)			Indicators of hydr	ophytic vegetation and wetland
Sandy Mucky Mine	eral (S1)		Depleted Dark Surf	ace (F7)			hydrology must be	present, unless disturbed or
Sandy Gleyed Mat	rix (S4)		Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pr	esent):		·		ydric Soil Presen	ıt?	·	
Тур					ĺ			🗖
Depth (inches							✓	Yes No
Remarks:								
HYDROLOGY								
Wetland Hydrology In	dicators:							
Primary Indicators (mi		ad: chack all	that apply)				Socondary Indicate	ors (2 or more required)
Primary mulcators (iiiii	minum or one require	eu, check an	that apply)				Secondary mulcati	ors (2 or more required)
Curface Water / A 1	١		□ Mater Stained	Looves (DO) love	omt MIDA		Mater Staines	LL coves (DO) (MILDA
Surface Water (A1	•			Leaves (B9) (exc	ept wilka			Leaves (B9) (MLRA
High Water Table	(A2)		1, 2, 4A, and 4				1, 2, 4A, and	-
✓ Saturation (A3)			Salt Crust (B11)				Drainage Patte	
Water Marks (B1)			Aquatic Inverte	ebrates (B13)			Dry-Season W	ater Table (C2)
Sediment Deposits	s (B2)		Hydrogen Sulfic	de Odor (C1)			Saturated Visi	ble on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizos	spheres along Liv	ing Roots (C3)		Geomorphic P	osition (D2)
Algal Mat or Crust				duction Iron (C4)	_		Shallow Aquita	ard (D3)
Iron Deposits (B5)	,			duction Tilled So			FAC-Neutral T	• •
Surface Soil Cracks	(R6)			essed Plants (D1)	· ·			ounds (D6) (LRR A)
	on Aerial Imagery (B	7)	Other (Explain	· ,	(LINK A)		Frost-Heave H	
		•		iii Keiiiai KS)			FIOST-Heave H	uninocks (D7)
	d Concave Surface (B	8)						
Field Observations:				Wetlai	nd Hydrology Pr •	esent?		
Surface Water Present	? Yes	☑ No	Depth (inches):					
Water Table Present?	☐ Yes	☑ No	Depth (inches):				✓	Yes L No
Saturation Present?	✓ Yes	☐ No	Depth (inches):	0				
(includes capillary fring	ge)							
Describe Recorded Dat	a (stream gauge, mo	nitoring well	, aerial photos, prev	ious inspections	, if available:			
Remarks:								

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site:	Port Gamble Re	edevelopment	Plan	_City/County:	Kitsap County	/		Samplir	ng Date: 8	/13/2012
Applicant/Owner:	Pope Resources	5			_ State	: <u>WA</u>		Samplin	g Point: <u>SP</u>	-31
Investigator(s):	J. Dadisman, L.	Berntsen		Section/Townsh	nip/Range:	Sec 7 Town 27N Ran	ge 2E			
Landform (hillslope, terrac	ce, etc.):	Hillslope		Local Relief (cor	ncave, convex, r	none): Nor	ie	Slo	ope (%): <u>2-</u>	1%
Subregion (LLR):	A		Lat:		Long	:	Datum:			
Soil Map Unit Name:	Mckenna grave	lly loam			_	WI Classification: Nor	ie			
Are climatic/hydrologic co	nditions on the	site typical for	this time of year?		_ ✓ Yes	□ No (if n	o, explain in R	emarks.)		
Are Vegetation	Soil	Hydrology	significantly distu	rbed?	Are "normal o	circumstances" preser	ıt?	✓ Ye	s No	
Are Vegetation		Hydrology	naturally problem			oplain any answers in F				
SUMMARY OF FINDIN	NGS									
Hydrophytic Vegetation Pr Hydric Soil Present? Weltand Hydrology Preser		✓ Yes ☐ Yes ✓ Yes ✓	4	Is the sampled a Wetland?	area within a	Yes V No				
Remarks:										
VEGETATION - Use so	cientific name	es of plants	•							
Tree Stratum			Absolute %	Dominant	Indicator	Dominance Test Wo	rksheet:			
	1		Cover	Species?	Status	4				
 Red Alder (Alnus rubra) Grand Fir (Abies grandi 			20	yes	FAC FACU	Number of dominan That are OBL, FACW		3		(A)
3.	3)			yes	TACO	That are Obt, I ACW	, or rac			(^)
4.					_	Total Number of Do	minant			
			60	= Total Cover		Species Across A		5		(B)
Sapling/Shurb Stratum				_						
1. Himalayan Blackberry (ıcus)	20	yes	FACU	Percent of dominant				
2. Salmonberry (Rubus sp			30	yes	FAC	That are OBL, FACW	, or FAC:	60)	(A/B)
3. Indian Plum (Oemleria	cerasiformis)		5	no	FACU					
<u>4.</u>						Prevalence Index Wo		details by		
5.				= Total Cover		Total % Cover OBL Species	of: Mit	ultiply by:	0	
Herb Stratum				- Total Cover		FACW Species	x 1		0	
1. Lady Fern (Athyrium file	ix-femina)		5	no	FAC	FAC Species	x 3		0	
2. Sword Fern (Polystichul	•		10	no	FACU	FACU Species	x 4		0	
3. Velvetgrass (Helcus lan			5	no	FAC	UPL Species	x 5	=	0	
4. Colonial Bentgrass (Agi	rostis capillaris)		5	no	FAC	Column Totals:	(A)		0	(B)
5. Creeping Buttercup (Ra		is)	40	yes	FAC					
6. Kentucky Bluegrass (Po	<u> </u>		5	no	FAC	Prevale	nce Index = B/	A =		
7. Field Horsetail (Equiset			5	no	FAC					
8. Unidentifiable Grasses			20	no		Hydrophytic Vegetat				
9. 10.			•		_	1 - Rapid Test fo 2 - Dominance T		vegetation		
11.						3 - Prevalence Ir				
			95	= Total Cover	_	4 - Morphologic		¹ (provide sup	porting dat	a in
Woody Vine Stratum						Remarks or on a	separate shee	t.		
1.						5 - Wetland Non	-Vascular Plar	nts ¹		
2.						Problem Hydrop	hytic Vegetati	on (Explain)		
			0	= Total Cover		¹ Indicators of hydric	soil and wetla	nd hydrology	must be nre	esent.
% Bare Ground ir	n Herb Stratum	0%				unless disturbed or		, a 5106y	pr	- > - · · · · /
Remarks:						Hydrophytic Vege	tation Present	:?	es No)
									1	

SOIL Sampling Point: SP-31

Depth	Matr	ix	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/2	100					sandy loam	
					.,			
					-			
					-			
	· 							
1	D. Danistian DM	Dll N 4 -	total CC. Coursed and	C+ C C	2,	DI Dana Hair	- NA NA-t-:-	
Type: C=Concentration,			•	Loated Sand Gra	ins. Location:	PL=Pore Linir	_	
Hydric Soil Indicators: (A	pplicable to all Li	RRs, unless of	therwise noted.)				Indicators for I	Problematic Hydric Soils ³ :
Uistical (A1)			Candy Daday (CE)				am Musik	(410)
Histisol (A1) Histic Epipedon (A2)		H	Sandy Redox (S5) Stripped Matrix (S6)	5)			2 cm Muck	t Material (TF2)
Black Histic (A3)		H	Loamy Mucky Mine	•	MIRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A4	1)	H	Loamy Gleyed Mat		IVILIVA I)			lain in Remarks)
		H	Depleted Matrix (F				Other (Exp	iam in Kemarks)
Depleted Below Dark Thick Dark Surface (A	• •	H	Redox Dark Surface	•			³ Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Minera	•	H	Depleted Dark Surf					t be present, unless disturbed or
Sandy Gleyed Matrix		H	Redox Depressions	· ,			problematic.	t be present, unless disturbed of
Restrictive Layer (if pres			Nedox Depressions	•	lydric Soil Presen	t?	problematic.	
Type:	c,.							
Depth (inches):	•							☐ Yes ✓ No
Remarks:	-							
HYDROLOGY								
Wetland Hydrology India	cators:							
Primary Indicators (minir	num of one requi	red; check all	that apply)				Secondary Indi	cators (2 or more required)
_			_				_	
Surface Water (A1)			☐ Water-Stained	Leaves (B9) (exc	cept MLRA		☐ Water-Stai	ned Leaves (B9) (MLRA
High Water Table (A2	2)		1, 2, 4A, and 4				1, 2, 4A, a	
Saturation (A3)			Salt Crust (B11					atterns (B10)
Water Marks (B1)			Aquatic Inverte				_	n Water Table (C2)
Sediment Deposits (E	32)		Hydrogen Sulfi				=	Visible on Aerial Imagery (C9)
Drift Deposits (B3)				spheres along Li				ic Position (D2)
Algal Mat or Crust (B	4)			duction Iron (C4			Shallow Aq	•
Iron Deposits (B5)				duction Tilled So			FAC-Neutra	
Surface Soil Cracks (E	•	,	_	essed Plants (D1)) (LRR A)			Mounds (D6) (LRR A)
Inundation Visible or	0, 1	•	U Other (Explain	in Remarks)			☐ Frost-Heav	re Hummocks (D7)
Sparsely Vegetated C	Concave Surface (I	38)		144 11	111 1 1 5			
Field Observations:	□ Vaa	N-	Danth (in ab as).	Wetla	nd Hydrology Pr	esent?		
Surface Water Present?	☐ Yes		Depth (inches):		-			☐ Yes ✓ No
Water Table Present? Saturation Present?	☐ Yes	=	Depth (inches): Depth (inches):		-			☐ fes ♥ No
(includes capillary fringe)	∐ Yes	S ✓ No	Deptil (iliches).		-			
Describe Recorded Data		onitoring wel	l aerial nhotos prev	vious inspections	l if available:			
Describe Recorded Bata	(stream gaage, m	ormornig wer	i, acriai priotos, prev	nous inspections	,, ii available.			
Remarks:								
1								

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site:	Port Gamble Redev	elopment P	lan	_City/County:	Kitsap County	/		San	npling Date: _	8/13/2012
Applicant/Owner:	Pope Resources				State	: <u>W</u> A		Sam	npling Point:	SP-32
Investigator(s):	J. Dadisman, L. <u>Ber</u> r	ntsen		Section/Townsh	nip/Range:	Sec 7 Town 27N Ran	nge 2E			
Landform (hillslope, terrac	ce, etc.): Hill	ltop		Local Relief (cor	ncave, convex, n	none): <u>Cor</u>	nvex		Slope (%):	<2%
Subregion (LLR):	Α		Lat:		Long	:	Datum:			
Soil Map Unit Name:	Kapaosin gravelly lo	oam 0-6% sl	opes		N	WI Classification: nor	ne			
Are climatic/hydrologic co	nditions on the site	typical for	this time of year?		✓ Yes	☐ No (if i	no, explain i	n Remarks.)		
Are Vegetation	Soil Hydr	ology	significantly distu	rbed?	Are "normal o	circumstances" prese	nt?	✓	Yes No)
Are Vegetation	Soil Hydr	ology	naturally problem	natic?	(if needed, ex	xplain any answers in	Remarks.)			
SUMMARY OF FINDIN	NGS									
Hydrophytic Vegetation Pr Hydric Soil Present? Weltand Hydrology Preser		Yes Yes Yes Y	No No No	Is the sampled a Wetland?	area within a	Yes V No				
Remarks:										
VEGETATION - Use so	cientific names o	of plants.								
Tree Stratum			Absolute %	Dominant Species 2	Indicator	Dominance Test W	orksheet:			
1. Western Red-Cedar (Th	uia plicata)	-	Cover 15	Species? yes	Status FAC	Number of dominar	nt Species			
2.	.,.,			,		That are OBL, FACW	•		4	(A)
<i>3</i> .										
4.			15	- Total Cover	_	Total Number of Do			4	(D)
Sapling/Shurb Stratum		_	15	_ = Total Cover		Species Across	All Strata:		4	(B)
1.						Percent of dominan	t Species			
2.						That are OBL, FACW	I, or FAC:		100	(A/B)
<i>3.</i>										
4.						Prevalence Index W				
<i>5.</i>			0	= Total Cover		Total % Cover OBL Species	r of:	Multiply by: x 1 =	0	
Herb Stratum		_	0	Total Cover		FACW Species		x 2 =	0	
1. Soft Rush (Juncus effusi	us)		15	yes	FACW	FAC Species		x 3 =	0	
2. Common Dandelion (Ta		·)	5	no	FACU	FACU Species		x 4 =	0	
3. Velvetgrass (Helcus lan			5	no	FAC	UPL Species		x 5 =	0	
4. Colonial Bentgrass (Agr			15	yes	FAC	Column Totals:		(A)	0	(B)
5. Creeping Buttercup (Ra			10	no	FAC					
6. Kentucky Bluegrass (Po			15	yes	FAC	Prevale	ence Index =	B/A =		
7. Curly Dock (Rumex crisp 8.	pusj	-	5	no	FAC	Hydrophytic Vogota	tion Indicat	orci		
9.						Hydrophytic Vegeta 1 - Rapid Test fo			n	
<u>10.</u>						2 - Dominance		-	"	
11.		-				3 - Prevalence I				
		1.	70	= Total Cover		4 - Morphologic		_	supporting	lata in
Woody Vine Stratum		_		_		Remarks or on a				
1.						5 - Wetland No				
2.					_	Problem Hydro			n)	
		-	0	= Total Cover		Indicators of hydric				nrocent
% Bare Ground in	Herb Stratum	0%		-		unless disturbed or		-	ogy must be f	present,
Remarks:						Hydrophytic Vege	etation Pres	ent?	Yes 🗌	No

SOIL Sampling Point: SP-32

Depth	Matr	İX	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/2	100					sandy loam	
	7.1							
¹ Type: C=Concentratio	n D-Denletion RM.	Reduced Ma	etrix CS=Covered or C	Coated Sand Grai	ins ² Location	: PL=Pore Linir	ag M-Matriy	
	•			coatea Sana Gra	iris. Locationi	T L-I OIC LIIII		mahlamatia Ukuduia Caila³.
Hydric Soil Indicators:	(Applicable to all Li	kks, uniess o	tnerwise noted.)				indicators for P	roblematic Hydric Soils ³ :
☐ Histian (A1)			Candy Daday (CE)				2 cm Muck	(410)
Histisol (A1)	2)	<u> </u>	Sandy Redox (S5)	-1				
Histic Epipedon (A	۷)	<u> </u>	Stripped Matrix (S6		B41 D A 4 \			Material (TF2)
Black Histic (A3)			Loamy Mucky Mine		IVILKA 1)			w Dard Surface (TF12)
Hydrogen Sulfide (Loamy Gleyed Mat				U Other (Expl	ain in Remarks)
Depleted Below Da	ark Surface (A11)	_	Depleted Matrix (F	•			j.	
Thick Dark Surface			Redox Dark Surface	· ·				ydrophytic vegetation and wetland
Sandy Mucky Mine	eral (S1)		Depleted Dark Surf	ace (F7)			hydrology must	be present, unless disturbed or
Sandy Gleyed Mat	rix (S4)		Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pr	esent):			Hy	ydric Soil Presen	ıt?		
Тур	e:							☐ Yes ✓ No
Depth (inches	s):							les V No
Remarks:					•			
HYDROLOGY								
	d:							
Wetland Hydrology In			1 4 h a 4 a m m l . ·\				Ca aa mala muulmali a	natara (2 an manua manuimad)
Primary Indicators (mi	nimum of one requi	rea; check an	that apply)				Secondary indic	ators (2 or more required)
Comfo on Motor (A1	`		□ Mateu Cteined	Lagues (DO) (gue	and MALDA		□ Matau Ctain	and Lagres (DO) (BALDA
Surface Water (A1				Leaves (B9) (exc	ept iviLKA			ned Leaves (B9) (MLRA
High Water Table	(A2)		1, 2, 4A, and 4				1, 2, 4A, an	
Saturation (A3)			Salt Crust (B11)				_	atterns (B10)
Water Marks (B1)	4		Aquatic Inverte					Water Table (C2)
Sediment Deposits			Hydrogen Sulfi				=	isible on Aerial Imagery (C9)
Drift Deposits (B3)				spheres along Liv				c Position (D2)
Algal Mat or Crust	(B4)		Presence of Re	duction Iron (C4))		Shallow Aqu	uitard (D3)
Iron Deposits (B5)			=	duction Tilled So	` '		FAC-Neutra	
Surface Soil Cracks	` '			essed Plants (D1)	(LRR A)		Raised Ant	Mounds (D6) (LRR A)
Inundation Visible	on Aerial Imagery (E	37)	U Other (Explain	in Remarks)			Frost-Heave	e Hummocks (D7)
Sparsely Vegetated	d Concave Surface (E	38)						
Field Observations:				Wetla	nd Hydrology Pr	esent?		
Surface Water Present	?	✓ No	Depth (inches):					_
Water Table Present?	☐ Yes	✓ No	Depth (inches):					☐ Yes ✓ No
Saturation Present?	☐ Yes	✓ No	Depth (inches):					
(includes capillary fring	ge)		_					
Describe Recorded Dat	ta (stream gauge, m	onitoring we	II, aerial photos, prev	ious inspections), if available:			
Remarks:								

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site:	Port Gamble R	edevelopmer	nt Plan	City/County:	Kitsap County	<u>/</u>		Sampling Date: 1	1/19/2012
Applicant/Owner:	Pope Resource	es			State	: <u>W</u> A		Sampling Point: SP	·-33
Investigator(s):	L. Berntsen	_		_ Section/Townsh	ip/Range:	Sec 7 Town 27N Range	2E		
Landform (hillslope, terra	ace, etc.):	Depression		_ Local Relief (con	icave, convex, r	none): concav	/e	Slope (%): <u>N/</u>	/A
Subregion (LLR):	Α		Lat	:	_ Long	:	Datum:		
Soil Map Unit Name:	McKenna grav	elly loam			_ N	WI Classification: none			
Are climatic/hydrologic c	conditions on the	e site typical t	for this time of year	?	✓ Yes	☐ No (if no,	explain in Remar	·ks.)	
Are Vegetation	Soil	Hydrology	significantly dist	urbed?	Are "normal o	circumstances" present?		✓ Yes No	
Are Vegetation	Soil	Hydrology	naturally proble	matic?	(if needed, ex	oplain any answers in Rer	narks.)		
SUMMARY OF FIND	INGS								
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Prese		✓ Yes ✓ Yes ✓ Yes	No No No No	Is the sampled a Wetland?	irea within a	✓ Yes No			
Remarks:									
VEGETATION - Use s	scientific nam	nes of plant	ts.						
Tree Stratum_		•	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Work	sheet:		
1.			Cover	эрссісэ:	Status	Number of dominant S	pecies		
2.						That are OBL, FACW, o	r FAC:	2	(A)
<i>3. 4.</i>						Total Number of Domii	nant		
7.			0	= Total Cover		Species Across All		2	(B)
Sapling/Shurb Stratum			,	_					
<u>1.</u> 2.				- .	_	Percent of dominant Sp That are OBL, FACW, or		100	(A/B)
<i>3.</i>					_	That are OBL, FACW, O			(A) b)
4.						Prevalence Index Work	sheet:		
5.					-	Total % Cover of			
Harb Stratum			0	_ = Total Cover		OBL Species FACW Species	x 1 = x 2 =	0	
Herb Stratum 1. Soft Rush (Juncus effu	ısus)		10	no	FACW	FAC Species FAC Species	x 2	0	
2. Broadleaf Cattail (Typ	•		30	yes	OBL	FACU Species	x 4 =	0	
3. Bentgrass Species (Ag	rostis Species)		60	yes	FAC	UPL Species	x 5 =	0	
4.			_	_	_	Column Totals:	<u> </u>	0	(B)
<i>5. 6.</i>				_	_	Prevalence	e Index = B/A =		
7.						- Trevalence	. macx = b/ \(\)		
8.						Hydrophytic Vegetation			
9.					-	1 - Rapid Test for H		tation	
10. 11.			_	_	_	2 - Dominance Test			
11.			100	= Total Cover	_			ovide supporting dat	ta in
Woody Vine Stratum						Remarks or on a sep		e sapporting dat	
1.						5 - Wetland Non-V			
2.						Problem Hydrophy	tic Vegetation (E	xplain)	
			0	= Total Cover		¹ Indicators of hydric so	il and wetland hy	ydrology must be pr	esent,
% Bare Ground	in Herb Stratum	0	<u>%</u>			unless disturbed or pro			
Remarks:						Hydrophytic Vegetat	ion Present?	✓ Yes N	0

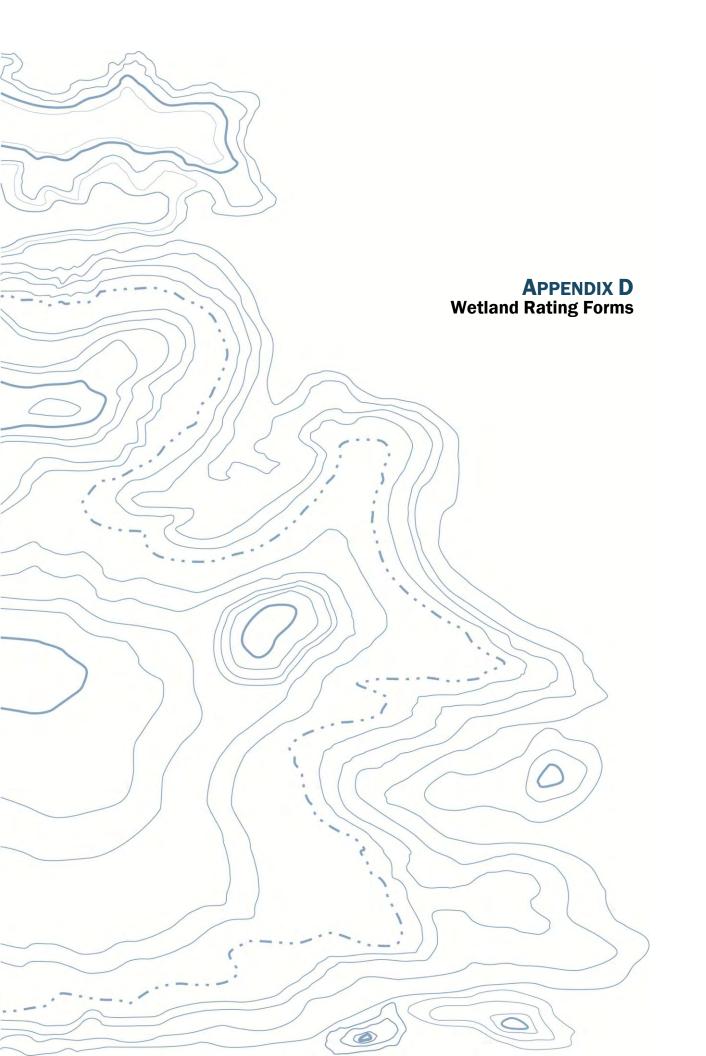
SOIL Sampling Point: SP-33

Redox Features

Depth

Matrix

(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 6/2	70	10YR 4/6	30	С	M	Clay Loam	
¹ Type: C=Concentration,	D=Depletion, RM-F	Reduced Mat	rix, CS=Covered or C	Coated Sand Gra	ains. ² Location:	: PL=Pore Linii	ng, M=Matrix	
Hydric Soil Indicators: (A	Applicable to all LR	Rs, unless ot	herwise noted.)				Indicators for F	Problematic Hydric Soils ³ :
☐ Histisol (A1)			Sandy Redox (S5)				2 cm Muck	(A10)
Histic Epipedon (A2)		Ħ	Stripped Matrix (S6)				Material (TF2)
Black Histic (A3)		H	Loamy Mucky Mine		t MLRA 1)			ow Dard Surface (TF12)
Hydrogen Sulfide (A	4)	Ħ	Loamy Gleyed Matr					lain in Remarks)
Depleted Below Dar			Depleted Matrix (F3					,
Thick Dark Surface (Ħ	Redox Dark Surface	-			⁵Indicators of h	ydrophytic vegetation and wetland
Sandy Mucky Miner	•	Ħ	Depleted Dark Surfa					t be present, unless disturbed or
Sandy Gleyed Matrix		Ħ	Redox Depressions				problematic.	e se present, amess alotal sea er
Restrictive Layer (if pres			nedox Depressions		Hydric Soil Preser	nt?	problematic.	
Type:				•				П., П.,
Depth (inches):								✓ Yes No
Remarks:								
Nemarks.								
HYDROLOGY								
Wetland Hydrology Indi	icators:							
Primary Indicators (mini		ed: check all	that apply)				Secondary Indi	cators (2 or more required)
, , , , , , , , , , , , , , , , , , , ,		.,	7,				, ,	
Surface Water (A1)			☐ Water-Stained	Leaves (B9) (ex	cept MLRA		☐ Water-Stai	ned Leaves (B9) (MLRA
High Water Table (A	2)		1, 2, 4A, and 4		•		1, 2, 4A, a	
Saturation (A3)	,		Salt Crust (B11)					atterns (B10)
Water Marks (B1)			Aquatic Inverte				_	Water Table (C2)
Sediment Deposits (B2)		Hydrogen Sulfic					Visible on Aerial Imagery (C9)
Drift Deposits (B3)	,				iving Roots (C3)			ic Position (D2)
Algal Mat or Crust (E	34)		Presence of Rec				Shallow Ag	
Iron Deposits (B5)	,		Recent Iron Rec	•	•		FAC-Neutra	
Surface Soil Cracks (B6)		Stunted or Stre					Mounds (D6) (LRR A)
Inundation Visible of	•	7)	Other (Explain i	•	,,		=	e Hummocks (D7)
Sparsely Vegetated		-	_ ` ` '	,			_	,
Field Observations:	,	,		Wetla	and Hydrology Pr	esent?		
Surface Water Present?	Yes	✓ No	Depth (inches):] , 3,			
Water Table Present?	✓ Yes	☐ No	Depth (inches):	(0			✓ Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):	C	<u></u>			
(includes capillary fringe)		_					
Describe Recorded Data		nitoring well	aerial photos, previ	ious inspection	s), if available:			
Remarks:								



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 w	vetland (if known): Wetland	d A			_	
Date of sit	e visit: 11/14/12					
Rated by:	J. Dadisman	Trained b	y Ecolog	gy? Yes X No Date of	training: 11/0	6
SEC: 7	TWNSHP: 27 N	RNO	GE: 02 I	E Is S/T/R in Appendi	x D? Yes	No <u>X</u>
	Map of wetlan	d unit: Fig	ure	Estimated size		_
		;	SUMM <i>A</i>	ARY OF RATING		
Category	based on FUNCTIONS pr	ovided by w	vetland:	I II <u>X</u>	III	IV
	Category I = Score >	70		Score for Water Quality Fu	nctions	18
	Category II = Score 51	1 - 69		Score for Hydrologic Fu	nctions	12
	Category III = Score 30) – 50		Score for Habitat Fu	nctions	23
	Category IV = Score <	30		TOTAL Score for Fu	nctions	53
Category l	based on SPECIAL CHARA	ACTERISTO	CS of We	tland I II	Does	not apply X
	Final	Categor	y (choos	se the "highest" category from	above")	II
	Summary	of basic info	rmation	about the wetland unit.		
	Wetland Unit ha Characteri			Wetland HGM Class used for Rating		
	Estuarine			Depressional	X	
	Natural Heritage	Wetland		Riverine		
	Bog			Lake-fringe		
	Mature Forest			Slope		
	Old Growth Fores	st		Flats		
	Coastal Lagoon			Freshwater Tidal		
	Interdunal					
	None of the above		X	Check if unit has multiple HGM classes present		

Wetland name or number: A

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
۷.	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 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
••	The wetland is on a slope (slope can be very gradual).
	The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale without distinct banks.
	The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO - go to 5 YES – The wetland class is Slope
_	
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	NO – go to 7 YES – The wetland class is Depressional
7.	Is the entire wetland 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 classes. 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

han 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	Treat as ESTUARINE under wetlands with special						
freshwater wetland	characteristics						

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)	Figure
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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	2
	YES points = 4 NO points = 0	0
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	 Area seasonally ponded is > 1/2 total area of wetland	4
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several 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, farmed	(see p. 44)
	fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	=
♦	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	2
	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 the outlet	7
	 Marks of ponding less than 0.5 ft	3
	Total for D 3 Add the points in the boxes above	
D 4	Does the wetland 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	(see p. 49) Multiplier

Wetland name or number: A

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	I
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	12

Thes	se questions apply to wetlands of all HGM classes.	Points	
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)	
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. X Aquatic Bed	Figure	
	X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 3 structures	2	
	2 structures points = 1 1 structure points = $\overline{0}$		
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). X Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points	Figure	
	Freshwater tidal wetland = 2 points Map of hydroperiods		
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and	Figure	
	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high".		
	Use map of Cowardin classes [riparian braided channels]	2	
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.	,	
	X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) X Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)	4	
	At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.		
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	10	

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to 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 50 ft. wide, has at least 30% cover of shrubs or forest, and connects 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 = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 5 mi (8km) of a lake greater than 20 acres? NO = 0 points	at to 1

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) 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 1/2 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 developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	4
 list. Nearby wetlands are addressed in question H 2.4) 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 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands 	
 There are at least 3 other wetlands within 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	5
 There is at least 1 wetland within 1/2 mile	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	13
TOTAL for H 1 from page 8	10
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	23

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.	
SC1	Estuarine wetlands? (see p.86)	
501	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 <i>Spartina</i> spp,. are 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	Cat. II
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
SC2	Natural Heritage Wetlands (see p. 87)	
502	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (see p. 87)	
503	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating \overrightarrow{NO} = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the 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)?	Cat. I
	YES = Category I NO = Is not a bog for purpose of rating	

SC4	Forested Wetlands (see p. 90)					
	Does the wetland 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 function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.					
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
303	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 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 ft.)					
	YES = Category I NO = Category II					
000	Interdunal Wetlands (see p. 93)	Cat. II				
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO X not 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:					
	• Long Beach Peninsula lands west of SR 103					
	• Grayland-Westport lands west of SR 105					
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$YES = Category II \qquad NO = go to SC 6.2$					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1					

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 v	vetland (if known): Wetland B				
Date of sit	te visit: 11/14/12				
Rated by:	J. Dadisman Tr	ained by Ecolo	gy? Yes X No Date of	training: 11/0	6
SEC: 7	TWNSHP: 27 N	RNGE: 02	E Is S/T/R in Appendi	x D? Yes	No <u>X</u>
	Map of wetland un	it: Figure	Estimated size		_
		SUMM	ARY OF RATING		
Category	based on FUNCTIONS provide	ed by wetland:	I <u>X</u>	III	IV
	Category I = Score > 70		Score for Water Quality Fu	nctions	18
	Category II = Score 51 - 69		Score for Hydrologic Fu	nctions	12
	Category III = Score 30 – 50)	Score for Habitat Fu	nctions	31
	Category IV = Score < 30		TOTAL Score for Fu	nctions	61
Category 1	based on SPECIAL CHARACTE	ERISTCS of W	etland I II	Does	not apply X
	Final Cat	tegory (choo	se the "highest" category from	above")	II
	Summary of ba	sic informatio	n about the wetland unit.	_	
	Wetland Unit has Spe Characteristics	ecial	Wetland HGM Class used for Rating		
	Estuarine		Depressional	X	
	Natural Heritage Wetl	and	Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope		
	Old Growth Forest		Flats		
	Coastal Lagoon		Freshwater Tidal		
	Interdunal				
	None of the above	X	Check if unit has multiple		

Wetland name or number: B

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 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 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – so to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	The wetland is on a slope (slope can be very gradual).
	The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale without distinct banks.
	The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
_	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	NO – go to 7 (YES –) The wetland class is Depressional
7.	Is the entire wetland 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38)
ו ע	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.50)
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	0
	YES points = 4 NO points = 0 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation (emergent, sinuo, and/or forest cowardin class).	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/2 total area of wetland	4
	• Area seasonally ponded is < 1/4 total area of wetland	4
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	 Vintreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland 	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplian
	Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Multiplier
	Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	_
♦	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	7
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	• Unit is a depression with no surface water leaving it (no outlet)	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	
	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 the outlet	
	• The wetland is a "headwater" wetland	7
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	,
	 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Marks of ponding less than 0.5 ft	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	12
D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity,	Multiplier
	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	1.1uitipiici
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from	

Wetland name or number: B

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	12

Thes	se questions apply to wetlands of all HGM classes.	Points	
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)	
H 1	1 Does the wetland have the <u>potential</u> to provide habitat for many species?		
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. X Aquatic Bed	Figure	
	X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	4	
	H 1.2 Hydroperiods (see p.73):	E:	
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). X Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 0	Figure	
	Z Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points Map of hydroperiods		
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is	Figure	
	None = 0 points Low = 1 point	3	
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) X Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X Invasive plants cover less than 25% of the wetland area in each stratum of plants	4	
	NOTE: The 20% stated in early printings of the manual on page 78 is an error.		

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): 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". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 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 (go to 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	4

	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	
	http://wdfw.wa.gov/hab/phslist.htm)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
	connections do not have to be relatively undisturbed.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	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).	
	Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	XOld-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/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%; crown cover may be less that	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
	than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	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. 158).	
	X Riparian : The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	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).	4
	XInstream: The combination of physical, biological, and chemical processes and conditions	
	that interact to provide functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
	Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, 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 human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
	be associated with cliffs.	
	XSnags 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)	
	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 1/2 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 developmentpoints = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 milepoints = 5	5
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	disturbedpoints = 3	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
	• There is at least 1 wetland within 1/2 mile	
	• There is at least 1 wetrand within 1/2 mile	
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	16
	TOTAL for H 1 from page 8	15
•	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	31

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.			
SC1				
501	Does the wetland unit meet the following criteria for Estuarine wetlands?			
	The dominant water regime is tidal,			
	Vegetated, and With a salinity greater than 0.5 ppt.			
	SC 1.1 Is the wetland 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. 1		
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?			
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I		
	less than 10% cover of non-native plant species. If the non-native Spartina spp., are 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 1. Do not, however, exclude the area of Spartina in	Cat. II		
	determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating I/II		
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	* ==		
SC2	Natural Heritage Wetlands (see p. 87)			
502	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as			
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or			
	Sensitive plant species.			
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This			
	question is used to screen out most sites before you need to contact WNHP/DNR.)			
	S/T/R information from Appendix D or accessed from WNHP/DNR web site X YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X			
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened			
	or endangered plant species?			
	YES = Category 1 NO X not a Heritage Wetland			
SC3	Bogs (see p. 87)			
	Does the wetland (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 function.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 soil profile? (See Appendix B for a field key to			
	identify organic soils)? YES = go to question 3 $NO = go to question 2$			
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over			
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or			
	pond? YES = go to question 3 NO = is not a bog for purpose of rating			
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,			
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?			
	YES = Is a bog for purpose of rating NO = go to question 4			
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that			
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is			
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.			
	4. Is the 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	a		
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I		
	1E3 – Category 1 NO – is not a bog for purpose of fatting			

	Forested Westenda (***** 00)				
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{}$ not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
200	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 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 ft.)	Cat. I			
	YES = Category I NO = Category II	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
SCO	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO X not 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:				
	• Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1				

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 w	vetland (if known): Wetland C			_	
Date of sit	e visit: 11/15/12				
Rated by:	J. Dadisman	Trained by Eco	ology? Yes X No	Date of train	ing: <u>11/06</u>
SEC: 7	TWNSHP: 27 N	RNGE: 2 E	Is S/T/R in Appendi	x D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size		-
		SUMMAI	RY OF RATING		
Category	based on FUNCTIONS provided	by wetland: 1	I II	III _X	IV
	Category I = Score > 70]	Score for Water Quality Fu	nctions	6
	Category II = Score 51 - 69		Score for Hydrologic Fu	nctions	8
	Category III = Score 30 – 50		Score for Habitat Fu	nctions	25
	Category IV = Score < 30		TOTAL Score for Fu	nctions	39
Category l	based on SPECIAL CHARACTER	- AISTCS of Wetl	and I II	Does	not apply X
	Final Cate	gory (choose	the "highest" category from	above")	III
	Summary of basic	c information :	about the wetland unit.		
	Wetland Unit has Spec Characteristics Estuarine	ial	Wetland HGM Class used for Rating Depressional	X	
	Notared Haritage Wetler	.1	Di		

•	
Wetland Unit has Special	
Characteristics	
Estuarine	
Natural Heritage Wetland	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

Wetland HGM Class	
used for Rating	
Depressional	X
Riverine	
Lake-fringe	
Slope	
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	X

Wetland name or number: C

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
۷.	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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	The wetland is on a slope (slope can be very gradual).
	The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale without distinct banks.
	The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
_	NO – so to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?
	X The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or
	river.
	X 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 of
0.	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 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 classes. 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

	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			

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	1
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = $\frac{0}{2}$	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation >= 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	3
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	2
	• Area seasonally ponded is > 1/4 total area of wetlandpoints = 2	
	• Area seasonally ponded is < 1/4 total area of wetland	
	Total for D 1 Add the points in the boxes above	6
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	
	may have pollutants coming from several 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, farmed	
	fields, roads, or clear-cut logging	Multiplian
	 Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	Multiplier
	Other	<u>1</u>
	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	6
_	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	<u> </u>
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	 Unit is a depression with no surface water leaving it (no outlet)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	0
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	
	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 the outlet	
	 The wetland is a "headwater" wetland	5
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	
	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 less than 10 times the area of unit	
	 The area of the basin is 10 to 100 times the area of the unit	3
	 The area of the basin is more than 100 times the area of the unit	<u> </u>
	Total for D 3 Add the points in the boxes above	8
D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	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	Multiplier
	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	I

Wetland name or number: C

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	8

Thes	se questions apply to wetlands of all HGM classes.	Points	
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)	
H 1	1 Does the wetland have the <u>potential</u> to provide habitat for many species?		
	Figure		
	Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures	1	
	2 structures points = 1 1 structure points = 0 H 1.2 <u>Hydroperiods</u> (see p.73):		
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated 3 or more types presentpoints = 2	Figure	
	Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points Map of hydroperiods	_	
	H 1.3 Richness of Plant Species (see p. 75):		
	Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), of the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more class or 3 vegetation classes and		
	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high".		
	Use map of Cowardin classes [riparian braided channels]	0	
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.	7	
	X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) X Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)		
	At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.		
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	8	

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?		(only 1 score per box)
	H 2.1 Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland criterion that applies to the wetland is to be used in the rating. See text = 100m (330 ft) of relatively undisturbed vegetated areas, rocky are > 95% of circumference. No structures are within the undisturbed p (relatively undisturbed also means no grazing, no landscaping, no dail X = 100m (330 ft) of relatively undisturbed vegetated areas, rocky are > 50% circumference	for definition of "undisturbed". as, or open water art of buffer y human use)	Figure
	H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken ve or upland) that is at least 50 ft. wide, has at least 30% cover of estuaries, other wetlands or undisturbed uplands that are at lea fringe wetland, if it does not have an undisturbed corridor as i	of shrubs, forest or native or undisturbed uplands that are at sed gravel roads, paved roads, o to H 2.2.2 getated corridor (either riparian shrubs or forest, and connects to st 25 acres in size? OR a Lake-	4

	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	
	http://wdfw.wa.gov/hab/phslist.htm)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
	connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Aspen Stands. Fure of finited stands of aspen greater than 0.4 na (1 acre)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).	
	Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	XOld-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/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%; crown cover may be less that	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
	than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	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. 158).	
	X Riparian : The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	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).	4
	XInstream: The combination of physical, biological, and chemical processes and conditions	
	that interact to provide functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
	Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
	relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, 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 human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
	be associated with cliffs.	
	XSnags 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)	
	 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 1/2 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 developmentpoints = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 milepoints = 5	5
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	disturbedpoints = 3	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
	• There is at least 1 wetland within 1/2 mile	
	• There are no wetlands within 1/2 mile	
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	17
	TOTAL for H 1 from page 8	8
_		
7	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	25

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.	
SC1	Estuarine wetlands? (see p.86)	
501	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The western distributed was a divine distribute on the second filling authorising and had	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 Spartina spp, are 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	Cat. II
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	Dual Rating I/II
	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?	Cat I
	YES = Category 1 NO $X_{\underline{}}$ not a Heritage Wetland	Cat I
C C 2	Bogs (see p. 87)	
SC3	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the 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)?	Cat. I
	YES = Category I NO = Is not a bog for purpose of rating	

SC4	Forested Wetlands (see p. 90)				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{}$ not a forested wetland with special characteristics	Cu., 1			
0.05	Wetlands in Coastal Lagoons (see p. 91)				
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.) YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	~			
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)	G . TT			
	YES = Category I NO = Category II	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO $X_{\underline{\underline{\underline{\underline{\underline{\underline{NO}}}}}}}$ not 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:				
	Long Beach Peninsula lands west of SR 103 Grayland Westport lands west of SP 105				
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	YES = Category II $\mathbf{NO} = \mathbf{go}$ to SC 6.2	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. 11			
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics	Cat. 111			
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
•	If you answered NO for all types enter "Not Applicable" on p. 1				
	ii you answered ivo for an types enter thot Applicable on p. 1				

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 w	vetland (if known): Wetland D			_		
Date of sit	te visit: 11/15/12					
Rated by:	J. Dadisman	_ Trained l	by Ecology? Yes X_ No	_ Date of train	ing: <u>11/06</u>	_
SEC: 7	TWNSHP: 27 N	RNGE: 2 E	Is S/T/R in Appendix	x D? Yes	No <u>X</u>	
	Map of wetland unit:	Figure	Estimated size_		-	
		SUMM	ARY OF RATING			
Category	based on FUNCTIONS provided	by wetland:	I II	III	IV <u>X</u>	
	Category I = Score > 70		Score for Water Quality Fur	nctions	4	
	Category II = Score 51 - 69		Score for Hydrologic Fur	nctions	3	
	Category III = Score 30 – 50		Score for Habitat Fur	nctions	19	
	Category IV = Score < 30		TOTAL Score for Fu	nctions	26	
Category	based on SPECIAL CHARACTER	ISTCS of Wo	etland I II	Does	not apply X	
	Final Cate	gory (choo	se the "highest" category from	above")	IV	
	Summary of basic	information	n about the wetland unit.			
	Wetland Unit has Speci Characteristics	al	Wetland HGM Class used for Rating			
	Estuarine		Depressional Depressional			
	Natural Heritage Wetlan	d	Riverine			
	Bog		Lake-fringe			
	Mature Forest		Slope	X		
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					

X

Check if unit has multiple

HGM classes present

None of the above

Wetland name or number: D

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
۷.	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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	X The wetland is on a slope (slope can be very gradual).
	XThe 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
_	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland 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 everbank flooding ecours at least once every two years
	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 of
0.	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 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 classes. 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

slope may grade into a reversite modeplant, or a small stream within	a depressional wedatic has a zone of mooding along its sides. Go		
BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REG	IMES 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		

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

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

S	Slope Wetlands	Points	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)	
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.64)	
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance) points = 3 • Slope is 1% - 2% points = 2 • Slope is 2% - 5% points = 1 • Slope is greater than 5% points = 0	2	
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = $\frac{0}{2}$ points	0	
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points	Figure	
	appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you		
	have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	0	
	• Dense, uncut, herbaceous vegetation > 90% of the wetland area		
	 Dense, uncut, herbaceous vegetation > 1/2 of area Dense, woody, vegetation > 1/2 of area points = 3 points = 2 		
	• Dense, uncut, herbaceous vegetation > 1/4 of area		
	• Does not meet any of the criteria above for vegetation		
	Total for S 1 Add the points in the boxes above	2	
S 2	Does the wetland have the opportunity to improve water quality?	(see p. 67)	
5 4	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 67)	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient		
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.		
	$\frac{X}{X}$ Grazing in the wetland or within 150 ft		
	Untreated stormwater discharges to wetland	Multiplier	
	Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland		
	Other	<u>2</u>	
•	YES multiplier is 2 NO multiplier is 1	4	
•	TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	4	
G 2	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
S 3	Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)	
	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland	1	
	 Dense, uncut, rigid vegetation > 1/2 area of wetland		
	• More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigidpoints = 0		
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area.	2	
	YES = $\frac{2 \text{ points}}{\text{NO}} = 0 \text{ points}$	2	
	Add the points in the boxes above	3	
S 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 70)	
	Is the wetland in a landscape position where the reduction in water velocity it provides helps protect		
	downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i>		
	Wetland has surface runoff that drains to a river or stream that has flooding problems	3.6 1.1 11	
	Other	Multiplier	
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)		
	YES multiplier is 2 NO multiplier is 1	<u>1</u>	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from S3 by S4; then <i>add score to table on p. 1</i>	3	

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?] per boxy
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Figure
	Adulte Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structurespoints = 2	2
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type present points = 1 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and	Figure
	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high".	
	Use map of Cowardin classes [riparian braided channels]	s 1
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning	2
	 (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. 	
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	6

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): 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". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 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 (go to 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	4

wetlands within 1/2 mile	3
 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile. There is at least 1 wetland within 1/2 mile 	
 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile. There is at least 1 wetland within 1/2 mile 	3
 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3	3
There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	3
wetlands within 1/2 mile	
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
list. Nearby wetlands are addressed in question H 2.4)	
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	
If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitats = 1 point No habitats = 0 points	
If wetland has 3 or more priority habitats = 4 points	
are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.	
breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs	
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at	
XSnags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient	
be associated with cliffs.	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
earth in soils, rock, ice, or other geological formations and is large enough to contain a human.	
relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the	
Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
interact to provide functional life history requirements for instream fish and wildlife resources.	
Instream: The combination of physical, biological, and chemical processes and conditions that	
a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	3
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
coverage of the oak component is important (full descriptions in WDFW PHS report p. 158).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy	
than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that	
trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters	
species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
XOld-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various	
connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
http://wdfw.wa.gov/hab/phslist.htm)	
of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions	

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.	
SC1	Estuarine wetlands? (see p.86)	
501	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The westland is relatively and introduced (hear and illing a displayer filling a cultivation arraying and hear	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 Spartina spp, are 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	Cat. II
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	Dual Rating I/II
G ~ =	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	0 1
SC3	Bogs (see p. 87)	
303	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO = go$ to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the 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	0.1.
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I
\Box	- Category 1 NO - 15 not a bog for purpose of fating	

		1			
SC4	Forested Wetlands (see p. 90)				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
BCS	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5)				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I			
	YES = Category I NO = Category II	Cat. II			
CC(Interdunal Wetlands (see p. 93)	- Cut. 11			
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO X not 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:				
	• Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1				

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 v	wetland (if known): Wetland	Е			_	
Date of sit	te visit: 11/19/12					
Rated by:	J. Dadisman	Trained by	Ecolog	y? Yes X No Date of the	raining: 11/06	
SEC: 7	TWNSHP: 27 N	RNG	E: 02 E	Is S/T/R in Appendix	D? Yes	No <u>X</u>
	Map of wetland	unit: Figu	re	Estimated size_		
		S	UMMA	RY OF RATING		
Category	based on FUNCTIONS pro	vided by we	etland:	I II	III <u>X</u>	IV
	Category I = Score > 7	0		Score for Water Quality Fun	ctions	12
	Category II = Score 51	- 69		Score for Hydrologic Fun	ctions	5
	Category III = Score 30 – 50			Score for Habitat Functions		
	Category IV = Score < 3	0		TOTAL Score for Fun	ctions	43
Category 1	based on SPECIAL CHARA	 CTERISTCS	S of Wet	tland I II	Does 1	not apply X
	Final (Category	(choose	e the "highest" category from a	above")	III
	Summary of	f basic infor	mation	about the wetland unit.		
	Wetland Unit has Characterist			Wetland HGM Class used for Rating		
	Estuarine			Depressional		
	Natural Heritage V	Vetland		Riverine		
	Bog			Lake-fringe	***	
	Mature Forest			Slope	X	
	Old Growth Forest			Flats Freshwater Tidal		
	Coastal Lagoon Interdunal			rresuwater Huai		
	None of the above		X	Check if unit has multiple HGM classes present		

Wetland name or number: E

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 – so 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 a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call 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	
2.	The entire wetland unit is flat and precipitation is 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.	
٥.	Does the entire wetland 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
4.	$X_{}$ The wetland is on a slope (slope can be very gradual).
	X The wettaild is on a stope (stope can be very gradual). X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hymmocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 (YES –) The wetland class is Slope
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	(NO – go to 7 YES – The wetland class is Depressional
7.	Is the entire wetland 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance). points = 3 • Slope is 1% - 2% points = 2 • Slope is 2% - 5% points = 1 • Slope is greater than 5% points = 0	3
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = 0 points	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants	Figure
	 are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area	3
	Total for S 1 Add the points in the boxes above	6
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. X Grazing in the wetland or within 150 ft	(see p. 67)
	Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other	Multiplier
	YES multiplier is 2 NO multiplier is 1	10
_	TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	12
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	1
S 3	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland. points = 6 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area. points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows.	(see p.68)
	The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2
	Add the points in the boxes above	
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 problems Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)	(see p. 70) Multiplier
	YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then add score to table on p. 1	<u>1</u> 5
•	TOTAL - Hydrorogic Functions within the score from 35 by 34, then and score to lable on p. 1	J

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Figure
	X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structurespoints = 2	2
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type present points = 0 Yermanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	
	Use map of Cowardin classes [riparian braided channels]	2
	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)	3
	X Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	10
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	10

H 2	Does the	wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
		affers (see P. 80): hoose the description that best represents condition of buffer of wetland unit. The highest scoring riterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	н	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 a 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 (go to H 2.3) NO = go to H 2.2.2 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR WES = 1 point NO = 0 points	4

_XOld-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/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%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. 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. 158).	S
	t 4
Note: All vegetated wetlands are by definition a priority habitat but are not included in list. Nearby wetlands are addressed in question H 2.4)	this
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. • There are at least 3 other wetlands within 1/2 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 developmentpoints = • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = • There is at least 1 wetland within 1/2 milepoints =	= 5 = 5 = 3 = 3 = 2
• There are no wetlands within 1/2 milepoints = H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.3	
TOTAL for H 1 from page	e 8 10

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.					
SC1	Estuarine wetlands? (see p.86)					
	Does the wetland unit meet the following criteria for Estuarine wetlands?					
	The dominant water regime is tidal,					
	Vegetated, and With a salinity greater than 0.5 ppt.					
	YES = Go to SC 1.1 NO $X_{}$					
	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. 1				
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?					
	YES = Category I NO = Category II The westend is relatively undisturbed (heare diling, disching, filling, cultivation, grazing, and hear	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 Spartina spp, are only species					
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II				
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in					
	determining the size threshold of 1 acre.	Dual				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Rating				
	The wetland has at least 2 of the following features: tidal channels, depressions with open water,	I/II				
	or contiguous freshwater wetlands.					
SC2	Natural Heritage Wetlands (see p. 87)					
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as					
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.					
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>					
	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 X					
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X					
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened					
	or endangered plant species?	Cat I				
	YES = Category 1 NO X not a Heritage Wetland					
SC3	Bogs (see p. 87) Does the wetland (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 function.					
	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 soil profile? (See Appendix B for a field key to					
	identify organic soils)? YES = go to question 3 NO = go to question 2					
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or					
	pond? YES = go to question 3 NO = is not a bog for purpose of rating					
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,					
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more					
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?					
	YES = Is a bog for purpose of rating NO = go to question 4					
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that					
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.					
	4. Is the 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)?	Cat. I				
	YES = Category I NO = Is not a bog for purpose of rating					

SC4	Forested Wetlands (see p. 90)			
	Does the wetland 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 function.			
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a			
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)			
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or			
	more).			
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees			
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW			
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.			
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old			
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than			
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	G . T		
	less than that found in old-growth.	Cat. I		
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \mathbf{X} \qquad \text{not a forested wetland with special characteristics}$			
SC5	Wetlands in Coastal Lagoons (see p. 91)			
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?			
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated			
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.			
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5			
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the			
	bottom.) YES = Go to SC 5.1 NO $X_{}$ not a wetland in a coastal lagoon			
	SC 5.1 Does the wetland meet all of the following three conditions?			
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has			
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).			
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed			
	or un-mowed grassland.	Cat. I		
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I		
	YES = Category I NO = Category II	Cat. II		
SC6	Interdunal Wetlands (see p. 93)			
500	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or			
	WBUO)?			
	YES = Go to SC 6.1 NO X not 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:			
	Long Beach Peninsula lands west of SR 103 Craylord Westport - lands west of SP 105			
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 			
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?			
	YES = Category II $\mathbf{NO} = \mathbf{go}$ to SC 6.2	Cat. II		
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. 11		
	YES = Category III	Cat. III		
	Category of wetland based on Special Characteristics			
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.			
•	If you answered NO for all types enter "Not Applicable" on p. 1			
	·			

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 w	vetland (if known): Wetland F					
Date of sit	e visit: 11/19/12					
Rated by:	J. Dadisman Train	ned by Ecolog	gy? Yes X No Date of tra	ining: 1	11/06	
SEC: 7	TWNSHP: 27 N	RNGE: 2 E	Is S/T/R in Appendix I	O? Yes_		No <u>X</u>
	Map of wetland unit:	Figure	Estimated size			
		SUMMA	ARY OF RATING			
Category	based on FUNCTIONS provided	by wetland:	I II	_ III _	<u>X</u>	IV
	Category I = Score > 70		Score for Water Quality Func	tions	14	
	Category II = Score 51 - 69		Score for Hydrologic Functions		10	
	Category III = Score 30 – 50	Score for Habitat Functions			19	
	Category IV = Score < 30		TOTAL Score for Func	tions	43	
Category l	based on SPECIAL CHARACTER	ISTCS of We	tland I II	I	Does not apply	X
	Final Cate	gory (choos	se the "highest" category from ab	ove")	III	
	Summary of basic	information	about the wetland unit.			
	Wetland Unit has Speci Characteristics	al	Wetland HGM Class used for Rating			
	Estuarine		Depressional	X		
	Natural Heritage Wetlan	d	Riverine			
	Bog		Lake-fringe			
	Mature Forest		Slope			
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					

X

None of the above

Wetland name or number: F

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 – so 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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 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 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	X The wetland is on a slope (slope can be very gradual).
	X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 (YES – The wetland class is Slope
5	
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	NO – go to 7 (YES –)The wetland class is Depressional
7	
7.	Is the entire wetland 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 classes. 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
	the become containing represents 1070 of more of the total area of the wouldness in the area of the class fished in containing 15 icss

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38)
ו ע	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	3
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	ъ.
	• Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of area	0
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	4
	 Area seasonally ponded is > 1/2 total area of wetland	_
	• Area seasonally ponded is < 1/4 total area of wetland	
	Map of Hydroperiods	L
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	X Grazing in the wetland or within 150 ft Untracted stormwater discharges to wetland	
	Untreated stormwater discharges to wetlandTilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Withipiter
	Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1 , ,,,
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	
	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 the outlet points = 7 The wetland is a "headwater" wetland points = 5 	
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	3
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	10
D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity,	Multiplier
	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	F /-
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from	

Wetland name or number: F

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	<u>1</u>
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the potential to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.	Figure
	Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures	0
	2 structures \hat{p} points = 1 1 structure \hat{p} points = 0	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Permanently flooded or inundated 4 or more types present points = 3	Figure
	X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points	1
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Di
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	rigure
	Use map of Cowardin classes [riparian braided channels]	s 0
	High = 3 points H 1.5 Special Habitat Features (see p. 77):	
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have	0
	not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	
1	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	2

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): 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". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 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 (go to 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	4

Minch of the following priority habitats are within 330ft (10m) of the wetland unit? NOTE: the comections do not have to be relatively undisturbed.		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	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the connections do not have to be relatively undistanched.			
Aspen Stands; Pure or mixed stands of aspen greater than 0.4 ha (1 acre). 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). Herhaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. XOld-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/ha (8 trees/acre) > 81 cm (32 in) dlbn or > 200 years of age. (Mature forests) Stands with average diameters exceeding 55 cm (21 in) dlbn crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. — Oregon white Oak: Woodlands Stands of pure oak or oak/comifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X Ripariam: The earth adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. 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). 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. — Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of instream fish and wildlife resources.) — Nearshore: Relatively undisturbed nearshore habitats. These include coastal Nearshore, Open Coast Nearshore, and Coastal Nearshore, of the Cascade and the definition of relatively undisturbed are in WDFW report; pp. 167-169 and glossary in Appendi			
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within 1/2 mile		*	
• There is at least 1 wetland within 1/2 mile			
• There are no wetlands within 1/2 mile		<u>*</u>	
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TOTAL for H 1 from page 8 2			17
, , , ,			2
	-		19

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.						
SC1	Estuarine wetlands? (see p.86)						
	Does the wetland unit meet the following criteria for Estuarine wetlands?						
	The dominant water regime is tidal,						
	Vegetated, and With a salinity greater than 0.5 ppt.						
	YES = Go to SC 1.1 NO X						
	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. 1					
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?						
	YES = Category I NO = Category II The westend is relatively undisturbed (hes no diling, disching, filling, cultivation, grazing, and hes	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 Spartina spp, are only species						
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II					
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in						
	determining the size threshold of 1 acre.	Dual					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Rating					
	The wetland has at least 2 of the following features: tidal channels, depressions with open water,	I/II					
	or contiguous freshwater wetlands.						
SC2	Natural Heritage Wetlands (see p. 87)						
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as						
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.						
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>						
	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 X						
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X						
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened						
	or endangered plant species?	Cat I					
	YES = Category 1 NO X not a Heritage Wetland						
SC3	Bogs (see p. 87) Does the wetland (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 function.						
	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 soil profile? (See Appendix B for a field key to						
	identify organic soils)? YES = go to question 3 NO = go to question 2						
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over						
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating						
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,						
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more						
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?						
	YES = Is a bog for purpose of rating $NO = go$ to question 4						
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that						
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is						
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the 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)?	Cat. I					
	YES = Category I NO = Is not a bog for purpose of rating						

SC4	Forested Wetlands (see p. 90)					
	Does the wetland 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 function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I $NO = X_{}$ not a forested wetland with special characteristics	Cu., 1				
0.05	Wetlands in Coastal Lagoons (see p. 91)					
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.) VES = Go to SC 5.1 NO. V. not a watland in a coastal largon					
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.					
	or un-mowed grassland. The westend is legger than 1/10 core (4250 square ft.)					
	The wetland is larger than 1/10 acre (4350 square ft.) YES = Category I NO = Category II					
	7					
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO $X_{\underline{\underline{\underline{\underline{\underline{\underline{NO}}}}}}}$ not 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:					
	Long Beach Peninsula lands west of SR 103 Grayland Westport - lands west of SP 105					
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II				
	Category of wetland based on Special Characteristics	Cat. III				
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1					
	ii you answered ivo for an types enter thot Applicable on p. 1					

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 w	vetland (if known): Wetlan	d G				
Date of sit	te visit: 11/19/12					
Rated by:	J. Dadisman	_ Trained b	y Ecolog	gy? Yes X No Date or	f training: 11/06	5
SEC: 7	TWNSHP: 27 N	RNO	GE: 02 l	E Is S/T/R in Append	lix D? Yes	No <u>X</u>
	Map of wetlan	nd unit: Fig	ure	Estimated size	2	_
		;	SUMM <i>A</i>	ARY OF RATING		
Category	based on FUNCTIONS pa	ovided by w	etland:	I II	III	IV <u>X</u>
	Category I = Score >	70		Score for Water Quality F	unctions	8
	Category II = Score 5	1 - 69		Score for Hydrologic F	unctions	3
	Category III = Score 3	0 – 50		Score for Habitat F	unctions	14
	Category IV = Score <	30		TOTAL Score for F	unctions	25
Category l	based on SPECIAL CHAR	ACTERISTO	CS of We	etland I II	Does	not apply X
	Final	Categor	y (choos	se the "highest" category fror	m above")	IV
	Summary	of basic info	rmation	about the wetland unit.	_	
	Wetland Unit ha Characteri			Wetland HGM Class used for Rating		
	Estuarine			Depressional		
	Natural Heritage	Wetland		Riverine		
	Bog			Lake-fringe		
	Mature Forest			Slope	X	
	Old Growth Fore	st		Flats		
	Coastal Lagoon			Freshwater Tidal		
	Interdunal					
	None of the above		X	Check if unit has multiple HGM classes present		

Wetland name or number: G

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 – so 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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
۷.	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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	X The wetland is on a slope (slope can be very gradual).
	X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 (YES –) The wetland class is Slope
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	NO – go to 7 YES – The wetland class is Depressional
7.	Is the entire wetland 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
S 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)points = 3 • Slope is 1% - 2%	, ,
	• Slope is greater than 5%	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	Figure
	Dense, uncut, herbaceous vegetation > 90% of the wetland area	1
	Total for S 1 Add the points in the boxes above	4
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. X Grazing in the wetland or within 150 ft	(see p. 67)
	Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other	Multiplier <u>2</u>
_	YES multiplier is 2 NO multiplier is 1	
•	Multiply the score from S1 by S2; then add score to table on p. 1	
-	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland points = 6 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0	1
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2
	Add the points in the boxes above	3
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? <i>Note which of the following conditions apply.</i>	(see p. 70)
•	Wetland has surface runoff that drains to a river or stream that has flooding problems Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then add score to table on p. 1	Multiplier 1 3
•	TOTAL - Hydrologic Functions Withinpry the score from 35 by 54, then and score to habite on p. 1	3

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?] per com
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.	Figure
	Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures	1
	2 structures $\frac{\text{points} = 1}{\text{points}}$ 1 structure $\frac{\text{points} = 0}{\text{points}}$	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3	Figure
	Seasonally flooded or inundated X Occasionally flooded or inundated 2 types presentpoints = 2 2 types presentpoints = 1 3 or more types presentpoints = 2 2 types presentpoints = 1 4 type presentpoints = 0 4 Permanently flowing stream or river in, or adjacent to, the wetland 5 Seasonally flowing stream in, or adjacent to, the wetland 4 Lake-fringe wetland = 2 points	1
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes [riparian braided channels]	s 1
	High = 3 points H 1.5 Special Habitat Features (see p. 77):	
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that	0
	are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. H 1 TOTAL Score – potential for providing habitat Add the points in the column above	4
	The second secon	-

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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" = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to 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 50 ft. wide, has at least 30% cover of shrubs or forest, and connects 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 = go to 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 miles of a large field or pasture (> 40 acres) OR WES = 1 point NO = 0 points	2 2

	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	
	http://wdfw.wa.gov/hab/phslist.htm)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
	connections do not have to be relatively undisturbed.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	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).	
	Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	XOld-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/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%; crown cover may be less that	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
	than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	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. 158).	
	X Riparian : The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	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).	4
	interact to provide functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
	Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
	relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, 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 human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
	be associated with cliffs.	
	_X _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)	
	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 1/2 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 developmentpoints = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 milepoints = 5	
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	disturbedpoints = 3	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within 1/2 milepoints = 3	
	• There is at least 1 wetland within 1/2 milepoints = 2	
	• There are no wetlands within 1/2 milepoints = 0	
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	10
	TOTAL for H 1 from page 8	4
•	Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	14

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.				
SC1	Estuarine wetlands? (see p.86)				
	Does the wetland unit meet the following criteria for Estuarine wetlands?				
	The dominant water regime is tidal,				
	Vegetated, and				
	With a salinity greater than 0.5 ppt.				
	$\mathbf{YES} = \mathbf{Go} \text{ to SC } 1.1 \qquad \qquad \mathbf{NO} \qquad \mathbf{X}_{\phantom{AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA$				
	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	Cat. 1			
	332-30-151? YES = Category I NO = go to SC 1.2				
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?				
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I			
	less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species				
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II			
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh				
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	ъ.			
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual			
	or un-mowed grassland	Rating I/II			
	The wetland has at least 2 of the following features: tidal channels, depressions with open water,	1/11			
	or contiguous freshwater wetlands.				
SC2	Natural Heritage Wetlands (see p. 87)				
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or				
	Sensitive plant species.				
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>				
	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 X				
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X				
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened				
	or endangered plant species?	Cat I			
	YES = Category 1 NO X not a Heritage Wetland				
SC3	Bogs (see p. 87)				
BCJ	Does the wetland (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 function.				
	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 soil profile? (See Appendix B for a field key to				
	identify organic soils)? YES = go to question 3 $NO = go$ to question 2				
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over				
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or				
	pond? YES = go to question 3 NO = is not a bog for purpose of rating				
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more				
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?				
	YES = Is a bog for purpose of rating NO = go to question 4				
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that				
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is				
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.				
	4. Is the 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)?	Cat. I			
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$				

SC4	Forested Wetlands (see p. 90)				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{}$ not a forested wetland with special characteristics	Cu. 1			
0.05	Wetlands in Coastal Lagoons (see p. 91)				
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	The wetland is larger than 1/10 acre (4350 square ft.)	G . TT			
	YES = Category I NO = Category II	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO $X_{\underline{\underline{\underline{\underline{\underline{\underline{\underline{N}}}}}}}}$ not 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:				
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	YES = Category II NO = go to SC 6.2				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics	Cut. 111			
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1				
	If you allowered in types enter Mot Applicable on p. 1				

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 v	vetland (if known): Wetland H			<u> </u>	
Date of sit	te visit: 11/19/12				
Rated by:	J. Dadisman Tr	ained by Ecolo	gy? Yes X No Date of	training: 11/06_	
SEC: 7	TWNSHP: 27 N	RNGE: 02	E Is S/T/R in Appendix	x D? Yes	No <u>X</u>
	Map of wetland un	it: Figure	Estimated size_	_	
		SUMM	ARY OF RATING		
Category	based on FUNCTIONS provide	ed by wetland:	I II	III <u>X</u>	IV
	Category I = Score > 70		Score for Water Quality Fun	nctions	4
	Category II = Score 51 - 69		Score for Hydrologic Fu	nctions	10
	Category III = Score 30 – 50)	Score for Habitat Fu	nctions	22
	Category IV = Score < 30		TOTAL Score for Fu	nctions	36
Category 1	based on SPECIAL CHARACTE	— ERISTCS of Wo	etland I II	Does n	ot apply X
	Final Cat	tegory (choo	se the "highest" category from	above")	III
	Summary of bas	sic informatio	n about the wetland unit.		
	Wetland Unit has Spo Characteristics	ecial	Wetland HGM Class used for Rating		
	Estuarine		Depressional		
	Natural Heritage Wetl	and	Riverine		
	Bog Mature Forest		Lake-fringe	V	
	Old Growth Forest		Slope Flats	X	
	Coastal Lagoon	+	Freshwater Tidal		
	Interdunal		riesiiwatei liuai		
	None of the above	X	Check if unit has multiple		

Wetland name or number: H

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 – so 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 a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
۷.	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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
••	X The wetland is on a slope (slope can be very gradual).
	X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hymmocks (depressions are usually $<$ 3 ft diameter and less than 1 foot deep).
	NO – go to 5 (YES –) The wetland class is Slope
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	(NO – go to 7 YES – The wetland class is Depressional
7.	Is the entire wetland 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

S	Slope Wetlands	Points	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)	
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.64)	
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)points = 3 • Slope is 1% - 2%points = 2 • Slope is 2% - 5%points = 1 • Slope is greater than 5%points = 0	2	
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = 0 points	0	
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or moved and plants	Figure	
	 are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area	2	
	Total for S 1 Add the points in the boxes above	4	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	(see p. 67)	
	Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other	Multiplier	
	YES multiplier is 2 NO multiplier is 1	4	
•	TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	4	
G 2	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
S 3	 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland	(see p.68)	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2	
	Add the points in the boxes above	5	
S 4	Does the wetland have the opportunity to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. X Wetland has surface runoff that drains to a river or stream that has flooding problems Other	(see p. 70) Multiplier	
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1	<u>2</u>	
•	TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then <i>add score to table on p. 1</i>	10	

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.	Figure
	Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.	1
	Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	
	H 1.2 <u>Hydroperiods</u> (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to	Figure
	cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 1 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland points	1
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes	Figure
	None = 0 points Low = 1 point Moderate = 2 points None = 0 points Low = 1 point Moderate = 2 points None = 0 points Low = 1 point Moderate = 2 points	rigure
	Use map of Cowardin classes [riparian braided channels]	1
	High = 3 points H 1.5 Special Habitat Features (see p. 77):	
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that	3
	are permanently or seasonally inundated (structures for egg-laying by amphibians) X Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	7

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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" X 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 5 mi (8km) of a large field or pasture (> 40 acres) OR WES = 1 point WES = 1 point NO = 0 points	4

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 1/2 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 developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	### Purpose ### PMS report p. 152). ### Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. 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/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%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. 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. 158). X _Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. 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). 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. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A). Caves: A naturally occurring cavity, 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 human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), c	3
TOTAL for H 1 from page 8 7	 There are at least 3 other wetlands within 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 There is at least 1 wetland within 1/2 milepoints = 2 There are no wetlands within 1/2 milepoints = 0 	
	** * * * * * * * * * * * * * * * * * * *	
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1 22		22

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.	
SC1	Estuarine wetlands? (see p.86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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	Cat. 1
	332-30-151? YES = Category I NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The western distributed was divined disching filling cultivation, engine and had	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 Spartina spp, are only species	
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual
	or un-mowed grassland	Rating I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
~ ~ •	· · · · · · · · · · · · · · · · · · ·	
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (see p. 87)	
	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO = go$ to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the 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)?	Cat. I
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

SC4	Forested Wetlands (see p. 90)					
	Does the wetland 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 function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
505	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon					
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)					
	YES = Category I NO = Category II	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
300	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO $X_{}$ not 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:					
	• Long Beach Peninsula lands west of SR 103					
	• Grayland-Westport lands west of SR 105					
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? 					
		G . TT				
	YES = Category II NO = go to SC 6.2 SC 6.2 Is the greatered between 0.1 and 1 ages on is it in a massis of wetlands that is between 0.1 and 1 ages?	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	~ . 				
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1					

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 w	wetland (if known): Wetland I			_	
Date of sit	te visit: 11/19/12				
Rated by: J. Dadisman		Trained b	y Ecology? Yes X_ No	_ Date of train	ning: <u>11/06</u>
SEC: 7	TWNSHP: 27 N	RNGE: 2 E	Is S/T/R in Appendix	D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size_		_
		SUMMA	ARY OF RATING		
Category	based on FUNCTIONS provided	by wetland:	I II	III	IV <u>X</u>
	Category I = Score > 70]	Score for Water Quality Fun	ctions	2
	Category II = Score 51 - 69		Score for Hydrologic Fun	0	
	Category III = Score 30 – 50		Score for Habitat Fun	ctions	16
	Category IV = Score < 30		TOTAL Score for Fun	ctions	18
Category	based on SPECIAL CHARACTER	ISTCS of We	tland I II	Does	not apply X
	Final Cate	gory (choos	se the "highest" category from a	above")	IV
	Summary of basic	information	about the wetland unit.	_	
	Wetland Unit has Spec Characteristics	ial	Wetland HGM Class used for Rating		
	Estuarine		Depressional		
	Natural Heritage Wetlan	d	Riverine		
	Bog Mature Forest		Lake-fringe	T	
	Old Growth Forest		Slope Flats	X	
	Coastal Lagoon		Freshwater Tidal		
	Interdunal		riesiiwatei iluai		
	None of the above	X	Check if unit has multiple		

Wetland name or number: I

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 - so to 2 YES - the wetland class is Tidal Fringe YES - the wetland class is Tidal Fringe 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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.
	$(NO - \mathbf{g})$ 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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4	
4.	Does the entire wetland meet all of the following criteria?
	X The wetland is on a slope (slope can be very gradual).
	X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 (YES) The wetland class is Slope
5.	Does the entire wetland 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 of
0.	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 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
S 1	Does the wetland have the potential to improve water quality?	per box) (see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)points = 3 • Slope is 1% - 2%	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = 0 points	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points	Figure
	appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants	0
	 are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area	
	Total for S 1 Add the points in the boxes above	1
S 2	Does the wetland have the opportunity to improve water quality?	(see p. 67)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. X Grazing in the wetland or within 150 ft	
	 Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland 	Multiplier
	Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	2
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	2
S 3	Does the wetland have the potential to reduce flooding and stream erosion?	(see p.68)
33	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland points = 6 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0	0
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	0
	Add the points in the boxes above	0
S 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 70)
	Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply</i> . Wetland has surface runoff that drains to a river or stream that has flooding problems Other	Multiplier
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1	<u>1</u>
	TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then <i>add score to table on p. 1</i>	0

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?] per boxy
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Figure
	X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 3 structures	0
	2 structurespoints = 1 1 structurepoints = 0 H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2	Figure
	Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	
	High = 3 points High = 3 points H 1.5 Special Habitat Features (see p. 77):	· ·
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that	0
	are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. H 1 TOTAL Score – potential for providing habitat Add the points in the column above	1
	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): 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". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 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 (go to 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	4

	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	
	http://wdfw.wa.gov/hab/phslist.htm)	
	Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
	connections do not have to be relatively undisturbed.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	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).	
	Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	XOld-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/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%; crown cover may be less that	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
	than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	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. 158).	
	X Riparian : The area adjacent to aquatic systems with flowing water that contains elements of	
	both aquatic and terrestrial ecosystems which mutually influence each other.	
	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).	4
	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.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
	Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
	relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, 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 human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
	composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
	be associated with cliffs.	
	XSnags 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)	
	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 1/2 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 developmentpoints = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 milepoints = 5	2
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	disturbedpoints = 3	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within 1/2 milepoints = 3	
	• There is at least 1 wetland within 1/2 mile	
	• There are no wetlands within 1/2 mile	15
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	<u> </u>
	TOTAL for H 1 from page 8	1
•	Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	16

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate						
	criteria are met.						
SC1	Estuarine wetlands? (see p.86)						
	Does the wetland unit meet the following criteria for Estuarine wetlands?						
	The dominant water regime is tidal,						
	Vegetated, and						
	With a salinity greater than 0.5 ppt.						
	YES = Go to SC 1.1 NO X						
	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	Cat. 1					
	332-30-151? YES = Category I NO = go to SC 1.2						
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?						
	YES = Category I NO = Category II The westland is relatively and introduction and the second divines disching filling evolution, engine and had	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 Spartina spp, are only species						
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II					
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh						
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	ъ.					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual					
	or un-mowed grassland	Rating I/II					
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11					
~ ~ •	·						
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as						
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or						
	Sensitive plant species.						
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>						
	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 X						
	YESContact WNHP/DNR (see p. 79) and go to SC 2.2 NO X						
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened						
	or endangered plant species?	Cat I					
	$\mathbf{YES} = \mathbf{Category} \ 1 \qquad \qquad \mathbf{NO} \ \mathbf{X} \underline{\hspace{1cm}} \text{not a Heritage Wetland}$						
SC3	Bogs (see p. 87)						
	Does the wetland (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 function.						
	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 soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2						
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over						
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or						
	pond? YES = go to question 3 NO = is not a bog for purpose of rating						
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,						
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more						
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?						
	YES = Is a bog for purpose of rating NO = go to question 4						
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that						
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is						
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.						
	4. Is the 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)?	Cat. I					
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$						

SC4	Forested Wetlands (see p. 90)					
	Does the wetland 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 function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than					
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally					
	less than that found in old-growth.	Cat. I				
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics	0 1				
0.05	Wetlands in Coastal Lagoons (see p. 91)					
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?					
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated					
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.					
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon					
						
	SC 5.1 Does the wetland meet all of the following three conditions?					
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	~				
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)	G . TT				
	YES = Category I NO = Category II	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO $X_{\underline{\underline{\underline{\underline{\underline{\underline{\underline{N}}}}}}}}$ not 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:					
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 					
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	YES = Category II $\mathbf{NO} = \mathbf{go}$ to SC 6.2	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. 11				
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics	Cat. 111				
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1					
	ii you answered ivo for an types enter thot Applicable on p. 1					

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 v	wetland (if known): Wetland J			_		
Date of sit	te visit: 11/19/12					
Rated by:	J. Dadisman	Trained	by Ecology? Yes X_ No	Date of train	ning: <u>11/06</u>	_
SEC: 7	TWNSHP: 27 N	RNGE: 2 E	E Is S/T/R in Appendix	D? Yes	No <u>X</u>	
	Map of wetland unit:	Figure	Estimated size		_	
		SUMM	ARY OF RATING			
Category	based on FUNCTIONS provided	by wetland:	: I II	III	IV <u>X</u>	
	Category I = Score > 70	1	Score for Water Quality Fund	ctions	2	
	Category II = Score 51 - 69		Score for Hydrologic Functions			
	Category III = Score 30 – 50	Score for Habitat Functions 1			10	
	Category IV = Score < 30		TOTAL Score for Fund	ctions	12	
Category	based on SPECIAL CHARACTER	ISTCS of W	etland I II	Does	not apply X	
	Final Cate	gory (choo	ose the "highest" category from a	lbove")	IV	
	Summary of basic	e informatio	n about the wetland unit.	<u> </u>		
	Wetland Unit has Spec Characteristics	ial	Wetland HGM Class used for Rating			
	Estuarine		Depressional			
	Natural Heritage Wetlan	ıd	Riverine			
	Bog		Lake-fringe			
	Mature Forest		Slope	X		
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	\mathbf{v}	Check if unit has multiple			

HGM classes present

X

None of the above

Wetland name or number: J

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 – so 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 a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call 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	
2.	The entire wetland unit is flat and precipitation is 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.	
٥.	Does the entire wetland 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
4.	X The wetland is on a slope (slope can be very gradual).
	X The wettailed is on a stope (stope can be very gradual). X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	$\overline{\text{NO}}$ – go to 5 $\overline{\text{YES}}$ The wetland class is Slope
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	NO – go to 7 YES – The wetland class is Depressional
7.	Is the entire wetland 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

S Does the wetland have the potential to improve water quality? See p.	S	Slope Wetlands	Points
S.1 Does the wetland have the potential to improve water quality? S.1 Characteristics of average slope of unit:		WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
Slope is 1% or less (a 1% slope has a 1 ft, vertical drop in elevation for every 100 ft, horizontal distance)	S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.64)
S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. • Dense, uncut, herbaceous vegetation > 90% of the wetland area		 Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)	1
appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface ⟨>75% cover⟩, and uncut means not grazed or mowed and plants are higher than 6 inches. • Dense, uncut, herbaceous vegetation > 90% of the wetland area. points = 3 • Dense, woody, vegetation > 1/2 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/2 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 3 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 3 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 3 • Dense, uncut, herbaceous vegetation > 1/4 of area. points = 3 • Dense, uncut, rigid vegetation > 1/2 area of wetland and very thin 150 ft. upslope of wetland Multiply the score from S1 by S2; then add score to table on p. 1 ■ Total for S1 HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion. ■ Total for the description that best fits conditions in the wetland (stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows). • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area. points = 3 • Dense, uncut, rigid vegetation > 1/4 area. points = 3 • Dense, uncut, rigid vegetation > 1/4 area. points = 3 • Dense, uncut, rigid vegetation > 1/4 area. points = 3 • Dense, uncut, rigid		S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = $\frac{0}{2}$ points	0
have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. • Dense, uncut, herbaceous vegetation > 90% of the wetland area		S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points	Figure
are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area. Dense, uncut, herbaceous vegetation > 1/2 of area. Dense, woody, vegetation > 1/2 of area. Dense, woody, vegetation > 1/2 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Does not meet any of the criteria above for vegetation. Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation polygons Add the points in the boxes above Acrial photo or map with vegetation points = 0 Total for S1 Add the points in the boxes above Acrial photo or map with vegetation points = 0 Total for S1 Acrial photo or map with vegetation points = 0 Total for S1 Acrial photo or map with vegetation polygons Add the points in the boxes above Total for S1 Acrial photo or map with vegetation points = 0 Total for S1 Acrial photo or map with vegetation points = 0 Total for S2 Acrial photo or map with vegetation in 1/2 of area. Total for S1 Acrial photo or map with vegetation points = 0 Total for S2 Total for S2 Acrial photo or map with vegetation po			0
S 2 Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. X Grazing in the wetland or within 150 ft. Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2		 are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area. Dense, uncut, herbaceous vegetation > 1/2 of area. Dense, woody, vegetation > 1/2 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Does not meet any of the criteria above for vegetation. 	v
Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. X Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1 **TOTAL - Water Quality Functions** Multiply the score from S1 by S2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion. S 3 Does the wetland have the potential to reduce flooding and stream erosion? S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation > 1/4 area of wetland			1
Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. X Grazing in the wetland or within 150 ft. Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other WES multiplier is 2 NO multiplier is 1 **TOTAL – Water Quality Functions** Multiply the score from S1 by S2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion. S 3 Does the wetland have the potential to reduce flooding and stream erosion? S 3.1 Characteristics of vegetation that best fits 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, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area of wetland Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dense, uncut, rigid vegetation > 1/4 area. Dens	S 2	Does the wetland have the opportunity to improve water quality?	(see p. 67)
Untreafed stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1 2 ★ TOTAL - Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1 2 HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion. S 3 Does the wetland have the potential to reduce flooding and stream erosion? (see p.8 S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland (stems of plants should be thick enough (usually > I/8in), or dense enough to remain erect during surface flows). Dense, uncut, rigid vegetation > 1/2 area of wetland points = 6 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4 area points = 0 Dense, uncut, rigid vegetation > 1/4		Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
No multiplier is 1 2		Untreated stormwater discharges to wetland	Multiplier
TOTAL - Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1		Other	<u>2</u>
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion. S 3 Does the wetland have the potential to reduce flooding and stream erosion? (see p. S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland		<u> </u>	
S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland	•		2
S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland			1
appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland	S 3		(see p.68)
The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points Add the points in the boxes above O S 4 Does the wetland have the opportunity to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. Wetland has surface runoff that drains to a river or stream that has flooding problems Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) 1		appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland	0
S 4 Does the wetland have the opportunity to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. Wetland has surface runoff that drains to a river or stream that has flooding problems Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)		The slope has small surface depressions that can retain water over at least 10% of its area.	0
Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. Wetland has surface runoff that drains to a river or stream that has flooding problems Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) 1		Add the points in the boxes above	0
Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. Wetland has surface runoff that drains to a river or stream that has flooding problems Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) 1	S 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 70)
the downstream side of a dam) $\underline{1}$		downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. Wetland has surface runoff that drains to a river or stream that has flooding problems Other	Multiplier
YES multiplier is 2 NO multiplier is 1			1
♦ TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then add score to table on p. 1	•		0

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Figure
	X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures	0
	2 structures points = 1 1 structure points = 0 H 1.2 Hydroperiods (see p.73):	
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type present points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes	Figure
	None = 0 points Low = 1 point Moderate = 2 points or 3 vegetation classes and open water, the rating is always "high".	
	Use map of Cowardin classes [riparian braided channels]	0
	High = 3 points H 1.5 Special Habitat Features (see p. 77):	
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)	0
	Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. H 1 TOTAL Score – potential for providing habitat Add the points in the column above	1
	The point in the committee to the commit	_

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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 = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripari or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved road are considered breaks in the corridor). YES = 4 points (go to 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 ripari or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connect estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lal fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	e at s,

	TOTAL for H 1 from page 8	1
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	9
	• There are no wetlands within 1/2 milepoints = 0	
	within 1/2 mile	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
,	disturbedpoints = 3	-
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	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 developmentpoints = 5	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
	list. Nearby wetlands are addressed in question H 2.4)	
ii wetia	and 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	
	and has 2 priority habitats = 3 points	
	and has 3 or more priority habitats = 4 points	
are > 30	0 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.	
	height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs	
	characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at	
	ciated with cliffs. Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient	
•	sed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
	alus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
	liffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	soils, rock, ice, or other geological formations and is large enough to contain a human.	
Ca	aves: A naturally occurring cavity, recess, void, or system of interconnected passages under the	
	ely undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
	Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
	earshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
	nstream: The combination of physical, biological, and chemical processes and conditions that to provide functional life history requirements for instream fish and wildlife resources.	
• •	rairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	3
	Yestside Prairies: Herbaceous, non-forested plant communities that can either take the form of	~
	uatic and terrestrial ecosystems which mutually influence each other.	
X	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of	
coverag	ge of the oak component is important (full descriptions in WDFW PHS report p. 158).	
	Pregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy	
	at found in old-growth; 80 - 200 years old west of the Cascade crest.	
	ing 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that decay, decadence, numbers of snags, and quantity of large downed material is generally less	
	cre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters	
	, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8	
	ld-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree	
	erbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	of native fish and wildlife (full descriptions in WDFW PHS report p. 152).	
	odiversity Areas and Corridors: Areas of habitat that are relatively important to various	
A٠	spen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
connec		
	of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the tions do not have to be relatively undisturbed.</i>	

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.	
SC1	Estuarine wetlands? (see p.86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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	Cat. 1
	332-30-151? YES = Category I NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The western distributed was divined disching filling cultivation, engine and had	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 Spartina spp, are only species	
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual
	or un-mowed grassland	Rating I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
~ ~ •	· · · · · · · · · · · · · · · · · · ·	
SC2	Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (see p. 87)	
	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO = go$ to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the 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)?	Cat. I
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

SC4	Forested Wetlands (see p. 90) Does the wetland 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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
503	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated	
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO $X_{}$ not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions?	
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	~
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1880 line (else colled the Western Boundary of Unland Ownership or	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?	
	YES = Go to SC 6.1 NO X not 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:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC (1) Letter without any appropriate in a great and that in any appropriate in the second state of the s	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? YES = Category II NO = go to SC 6.2	G . TT
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II
	YES = Category III	Cot III
	Category of wetland based on Special Characteristics	Cat. III
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
 	If you answered NO for all types enter "Not Applicable" on p. 1	
	If you answered the for all types enter front hippineasie on p. 1	

Wetland name or number: K

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 w	vetland (if known): Wetland K				
Date of sit	e visit: 6/18/12				
Rated by:	J. Dadisman	Trained by	Ecology? Yes X No	Date of train	ning: <u>11/06</u>
SEC: 07	TWNSHP: 27 N	RNGE: 02 H	E Is S/T/R in Append	ix D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size		_
		SUMMA	RY OF RATING		
Category	based on FUNCTIONS provided	by wetland:	I II	IIIX_	IV
	Category I = Score > 70		Score for Water Quality F	unctions	20
	Category II = Score 51 - 69		Score for Hydrologic F	unctions	10
	Category III = Score 30 – 50		Score for Habitat F	unctions	18
	Category IV = Score < 30		TOTAL Score for F		48
	category IV = Score \ 30		TOTAL Score for T	unctions	40
Category l	based on SPECIAL CHARACTER	ISTCS of We	tland	Does	not apply <u>X</u>
	Final Cate	gory (choos	e the "highest" category fror	n above")	III
	Summary of basic	information	about the wetland unit.		
	Wetland Unit has Spec Characteristics		Wetland HGM Class used for Rating		
	Estuarine		Depressional	X	
	Natural Heritage Wetlan	d	Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope		
	Old Growth Forest		Flats		
	Coastal Lagoon		Freshwater Tidal		
	Interdunal				
	None of the above	X	Check if unit has multiple HGM classes present		

Wetland name or number: K

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
۷.	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 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	(NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	The wetland is on a slope (slope can be very gradual).
	The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale without distinct banks.
	The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland 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 of
0.	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 located in a very flat area with no obvious depression and no overbank flooding. The unit does not
7.	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 classes. 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

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 represe	ents more than 90% of the total area.	
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating	
Clana Divarina	Divonino	

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38)
D 1	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.30)
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	3
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	<u></u>
	• Wetland has persistent, ungrazed vegetation > = 95% of areapoints = 5	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	2
	 Area seasonally ponded is > 1/2 total area of wetland	2
	• Area seasonally ponded is $< 1/4$ total area of wetland	
	Map of Hydroperiods	<u> </u>
	Total for D 1 Add the points in the boxes above	10
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	
	may have pollutants coming from several 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, farmed	
	fields, roads, or clear-cut logging	Multiplier
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	Manaphor
	Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	20
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1 ((6)
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	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 the outlet	2
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	3
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outletpoints = 3	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 • Marks of ponding less than 0.5 ft	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is more than 100 times the area of the unit	
<u> </u>	• Entire unit is in the FLATS class	<u> </u>
	Total for D 3 Add the points in the boxes above	10
D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity,	Multiplier
	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	r ~
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from	

Wetland name or number: K

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. — Wetland is in a headwater of a river or stream that has flooding problems. — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	1
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?]
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Figure
	X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-	1
	cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3	Figure
	X Seasonally flooded or inundated 3 or more types presentpoints = 2	1
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	None = 0 points Low = 1 point Moderate = 2 points Use map of Cowardin classes High = 3 points [riparian braided channels]	1
	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)	0
	At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. H 1 TOTAL Score – potential for providing habitat Add the points in the column above	
		•

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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 = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripari or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that ar least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads are considered breaks in the corridor). YES = 4 points (go to 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 ripari or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connect estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lal fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	e at s,

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	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
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>).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
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/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%; crown cover may be less that	
100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
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. 158).	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
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).	1
Instream: The combination of physical, biological, and chemical processes and conditions that	1
interact to provide functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, 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 human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
be associated with cliffs.	
XSnags 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 = $\frac{1}{1}$ 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)	
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 1/2 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 developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	5
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 mile	
• There is at least 1 wetland within 1/2 mile	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	14
TOTAL for H 1 from page 8	4
Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	18

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.	
SC1	Estuarine wetlands? (see p.86)	
DC1	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X	
	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. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 Spartina spp, are only species	
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Rating
	or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	I/II
	or contiguous freshwater wetlands.	
SC2	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 westland being rested in a Section/Township/Renge that contains a natural haritage westland? (This	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (see p. 87)	
	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 $NO = go$ to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO = go$ to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sittle spruce, subalpine fir western red coder, western	
	4. 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)?	Cat. I
	YES = Category I NO = Is not a bog for purpose of rating	

SC4	Forested Wetlands (see p. 90)				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
303	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. 1			
	YES = Category I NO = Category II	Cat. II			
000	Interdunal Wetlands (see p. 93)	Cat. II			
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO X not 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:				
	• Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
♦	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1				

Wetland name or number: L

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 w	vetland (if known): Wetland L				
Date of sit	te visit: 6/18/12				
Rated by:	J. Dadisman	_ Trained by	Ecology? Yes X No	Date of traini	ng: <u>11/06</u>
SEC: 07	TWNSHP: 27 N	RNGE: 02 I	E Is S/T/R in Append	ix D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size		
		SUMMA	ARY OF RATING		
Category	based on FUNCTIONS provided	by wetland:	I II	IIIX	IV
	Category I = Score > 70		Score for Water Quality Fu	inctions	10
	Category II = Score 51 - 69		Score for Hydrologic Fu	inctions	10
	Category III = Score 30 – 50		Score for Habitat Fu	ınctions	19
	Category IV = Score < 30		TOTAL Score for Fu	inctions	39
Cotogory l	based on SPECIAL CHARACTER	J ISTCS of Wo	tland I II	Doos r	
Category					
	Final Cate	gory (choos	se the "highest" category from	n above")	III
	Summary of basic	information	about the wetland unit.		
	Wetland Unit has Spec Characteristics	ial	Wetland HGM Class used for Rating		
	Estuarine		Depressional	X	
	Natural Heritage Wetlan	d	Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope		
	Old Growth Forest		Flats		
	Coastal Lagoon		Freshwater Tidal		
	Interdunal				
	None of the above	X	Check if unit has multiple		

Wetland name or number: L

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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.

NO - so 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 thousa YES - Freshwater Tidal Fringe NO - Saltwater Tidal Fringe (Estua If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe use the forms for Riverine wetlands.	and)?
YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estua If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe use the forms for Riverine wetlands.	and 17
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltv	
is noted as an Estraphyse modern d. Wetlands that were nell extremine in the first and accorded the continue of	
is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating s	
Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the	ne earlier editions, and
this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetl	tland 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 only source (>90%) of water to it. Groundwater and	surface water
runoff are NOT sources of water to the unit.	surface water
/ \	
If your wetland can be classified as a "Flats" wetland, use the form for Depressional wetlands.	
3. Does the entire wetland meet both of the following criteria?	
The vegetated part of the wetland is on the shores of a body of permanent open water (with	thout any
vegetation on the surface) where at least 20 acres (8ha) in size;	
At least 30% of the open water area is deeper than 6.6 (2 m)?	
NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fri	inge)
4. Does the entire wetland meet all of the following criteria?	
The wetland is on a slope (slope can be very gradual).	
The water flows through the wetland in one direction (unidirectional) and usually comes from	from seens. It may
flow subsurface, as sheetflow, or in a swale without distinct banks.	nom sceps. It may
The water leaves the wetland without being impounded?	
NOTE: Surface water does not pond in these types of wetlands except occasionally in ver	m, am all and
shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less	s than I foot deep).
NO – go to 5 YES – The wetland class is Slope	s than I foot deep).
NO – go to 5 YES – The wetland class is Slope 5. Does the entire wetland meet all of the following criteria?	
NO – go to 5 YES – The wetland class is Slope	
5. Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it gets inundated by overbank flooding from river.	
NO - go to 5 YES - The wetland class is Slope 5. Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it gets inundated by overbank flooding from	
5. Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it gets inundated by overbank flooding from 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	om that stream or
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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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
U I	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
1	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	3
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	0
	YES points = 4 NO points = 0 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation > = 95% of areapoints = 5	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	5
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	Ta.
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	• Area seasonally ponded is > 1/2 total area of wetland	2
	• Area seasonally ponded is > 1/4 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	
	Total for D 1 Map of Hydroperiods Add the points in the boxes above	10
_		
2	Does the wetland have the opportunity to improve water quality?	(see p. 44
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several 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, farmed	
	fields, roads, or clear-cut logging Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	
	Other	<u>1</u>
_	YES multiplier is 2 NO multiplier is 1	
▼	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	10
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1 / 16
3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)points = 4	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	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 the outlet	
	 The wetland is a "headwater" wetland	3
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	• The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is 10 to 100 times the area of the unit	
	 The area of the basin is more than 100 times the area of the unit	
	Total for D 3 Add the points in the boxes above	10
. 1	•	(see p. 49)
) 4	Does the wetland 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	Multiplier
	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	<u> </u>

Wetland name or number: L

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	<u>1</u>
	YES multiplier is 2 NO multiplier is 1	
♦	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	10

Thes	e questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover)	Figure
	Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 3 structures	
	2 structurespoints = 1 1 structurepoints = 0 H 1.2 <u>Hydroperiods</u> (see p.73):	E.
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is	Figure
	None = 0 points Low = 1 point	1
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	1
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	5

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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 = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripari or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that ar least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads are considered breaks in the corridor). YES = 4 points (go to 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 ripari or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connect estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lal fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	e at s,

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	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Aspen Stands. I are of fineed stands of aspen greater than 0.4 ha (1 acre)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).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
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/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%; crown cover may be less that	
100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
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. 158).	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of	4
a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	1
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.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, 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 human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
be associated with cliffs.	
XSnags 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)	
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 1/2 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 developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 mile	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	5
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	14
TOTAL for H 1 from page 8	5
Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	19

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.	
SC1	Estuarine wetlands? (see p.86)	
501	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The westland is relatively an disturbed (hear and divine distribution of the continuous and hear).	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 <i>Spartina</i> spp, are 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	Cat. II
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	Dual Rating I/II
	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	<u>Bogs</u> (see p. 87)	
	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the 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)?	Cat. I
	YES = Category I NO = Is not a bog for purpose of rating	

SC4	Forested Wetlands (see p. 90)				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{}$ not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 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 ft.)				
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} \ = \mathbf{Category} \ \mathbf{II}$	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
DCU	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO $X_{}$ not 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:				
	Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1. Is the wetland one agree or larger, or is it in a mosaic of wetlands that is one agree or larger?				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? YES = Category II NO = go to SC 6.2				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II			
	YES = Category III	C 4 III			
	· ·	Cat. III			
	Category of wetland based on Special Characteristics Chapter the "highest" rating if yetland falls into several enterprises and record on p. 1				
▼	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1				

Wetland name or number: M

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 w	vetland (if known): Wetland M				
Date of sit	te visit: 6/18/12				
Rated by:	J. Dadisman	_ Trained by	Ecology? Yes X No	Date of train	ning: <u>11/06</u>
SEC: 07	TWNSHP: 27 N	RNGE: 02 H	E Is S/T/R in Append	ix D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size		_
		SUMMA	ARY OF RATING		
Category	based on FUNCTIONS provided	by wetland:	I II	IIIX_	IV
	Category I = Score > 70	1	Score for Water Quality F	unctions	12
	Category II = Score 51 - 69		Score for Hydrologic F	unctions	7
	Category III = Score 30 – 50		Score for Habitat F	unctions	16
	Category IV = Score < 30		TOTAL Score for F	unctions	35
Cotogory l	based on SPECIAL CHARACTER	J JETCS of Wo	tland I II	Doos	
Category					
	Final Cate	gory (choos	e the "highest" category from	n above")	III
	Summary of basic	information	about the wetland unit.		
	Wetland Unit has Spec Characteristics	ial	Wetland HGM Class used for Rating		
	Estuarine		Depressional	X	
	Natural Heritage Wetlan	ıd	Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope		
	Old Growth Forest		Flats		
	Coastal Lagoon		Freshwater Tidal		
	Interdunal				
	None of the above	X	Check if unit has multiple HGM classes present		

Wetland name or number: M

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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.

	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 a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call 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
	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 a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Frings in the Undergromer his Classification, Estuaring watlands were astagorized congretally in the applier 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 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. I	Does the entire wetland meet both of the following criteria?
J. 1	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4. I	Does the entire wetland meet all of the following criteria?
4. 1	
	The wetland is on a slope (slope can be very gradual). The water flows through the wetland in one direction (unidirectional) and usually somes from score. It may
	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 types of wetlands except occasionally in very small and
	shallow d <u>epr</u> essions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	shattow depressions or benting nummocks (depressions are usually < 5): attained tess than 1 jobs deep). NO – so to 5 YES – The wetland class is Slope
5. I	Does the entire wetland 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
	s the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
t	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. I	s the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not
	bond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The
7	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 classes. For example, seeps at the base of a
	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
8. Y	No – go to 8 YES – The wetland class is Depressional Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38)
ו ע	D 1.1 Characteristics of surface water flows out of the wetland:	, ,
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	3
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	1
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	2
	 Area seasonally ponded is > 1/2 total area of wetland	_
	• Area seasonally ponded is $< 1/4$ total area of wetland	
	Map of Hydroperiods	<u>_</u>
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several 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, farmed fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	_
	Other YES multiplier is 2 NO multiplier is 1	2
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	12
·	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	Does the wetland have the potential to reduce flooding and erosion?	(see p.46)
	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)points = 4	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	,
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 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 the outlet	
	 The wetland is a "headwater" wetland	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	
D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
1	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	Multiplier
1	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	<u> </u>

Wetland name or number: M

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. — Wetland is in a headwater of a river or stream that has flooding problems. — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	1
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	7

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	per com,
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Figure
	Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Wap of Cowardin vegetation classes 3 structures	0
	2 structures	Figure
	cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 Saturated only 1 type present points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland points = 2 points	0
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water the reting is	Figure
	None = 0 points Low = 1 point Moderate = 2 points Open water, the rating is always "high". Use map of Cowardin classes [riparian braided channels]	0
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants	1
	NOTE: The 20% stated in early printings of the manual on page 78 is an error.	

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripari or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that ar least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads are considered breaks in the corridor). YES = 4 points (go to 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 ripari or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connect estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lateringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	e at s to

	Mrich 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). 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). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. 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/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%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. 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. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. 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). 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. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A). Cav	1
	H 2.4 Wetlands are addressed in question 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 1/2 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 developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	5
	within 1/2 mile	
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	14
•	TOTAL for H 1 from page 8	2
♦	Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	16

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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	Cat. 1
	332-30-151? YES = Category I NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The westland is relatively and introduction and the second divines disching filling evolutions are also and head	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 Spartina spp, are only species	
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual
	or un-mowed grassland	Rating I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water,	1/11
	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (see p. 87)	
bes	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the 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)?	Cat. I
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

SC4	Forested Wetlands (see p. 90)				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics	0444			
0.05	Wetlands in Coastal Lagoons (see p. 91)				
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	~			
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)	G . TT			
	YES = Category I NO = Category II	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO $X_{\underline{\underline{\underline{\underline{\underline{\underline{N}}}}}}}$ not 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:				
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 				
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	YES = Category II $\mathbf{NO} = \mathbf{go}$ to SC 6.2	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II			
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics	Cut. 111			
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
•	If you answered NO for all types enter "Not Applicable" on p. 1				
	in journal of the for the types enter front appropries				

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 v	vetland (if known): Wetland N				
Date of sit	te visit: 6/18/12				
Rated by:	J. Dadisman	_ Trained by	Ecology? Yes X No	Date of train	ing: <u>11/06</u>
SEC: 07	TWNSHP: 27 N	RNGE: 02 I	E Is S/T/R in Appendi	ix D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size		
		SUMMA	ARY OF RATING		
Category	based on FUNCTIONS provided	by wetland:	I II	IIIX_	IV
	Category I = Score > 70		Score for Water Quality Fu	inctions	8
	Category II = Score 51 - 69		Score for Hydrologic Fu	inctions	8
	Category III = Score 30 – 50		Score for Habitat Fu	inctions	15
	Category IV = Score < 30		TOTAL Score for Fu	inctions	31
Category	based on SPECIAL CHARACTER	ISTCS of We	tland	Does	not apply X
	Final Cate	gory (choos	e the "highest" category from	above")	III
	Summary of basic	c information	about the wetland unit.		
	Wetland Unit has Spec Characteristics	ial	Wetland HGM Class used for Rating		
	Estuarine		Depressional	X	
	Natural Heritage Wetlan	ıd	Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope		
	Old Growth Forest		Flats		
	Coastal Lagoon		Freshwater Tidal		
	Interdunal				
	None of the above	X	Check if unit has multiple HGM classes present		

Wetland name or number: N

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 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 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	The wetland is on a slope (slope can be very gradual).
	The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may
	flow subsurface, as sheetflow, or in a swale without distinct banks.
	The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
_	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland.
	NO – go to 7 (YES –)The wetland class is Depressional
7.	Is the entire wetland 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38)
ו ע	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	3
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure.
	 Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	1
	• Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	0
	• Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	
	Total for D 1 Map of Hydroperiods Add the points in the boxes above	
D 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 44)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several 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, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	_
♦	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	8
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	 Unit is a depression with no surface water leaving it (no outlet)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	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 the outlet points = 7	
	• Marks of pointing are 3 ft. or more above the surface of bottom of the outlet	1
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outletpoints = 5	1
	 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Marks of ponding less than 0.5 ft	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	
	• The area of the basin is 10 to 100 times the area of the unitpoints = 3	3
	 The area of the basin is more than 100 times the area of the unit	
	Total for D 3 Add the points in the boxes above	8
D 4	•	
D 4	Does the wetland 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,	(see p. 49)
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive	Multiplier
	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	
	Butter, ring rainer, research ever extra jou estimate that more than 7070 of the water in the wettand is from	1

Wetland name or number: N

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	<u>1</u>
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	8

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants	Figure
	Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	v
	H 1.2 Hydroperiods (see p.73):	Ta.
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland 2 points	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes [riparian braided channels]	0
	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	0
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	2

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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" = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparia or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads are considered breaks in the corridor). YES = 4 points (go to 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 riparia or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lak fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR • Within 1 mile of a lake greater than 20 acres? NO = 0 points	at at to 4

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 1/2 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 developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3 • There is at least 1 wetland within 1/2 milepoints = 2 • There are no wetlands within 1/2 mile	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. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. 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). 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. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A). Caves: A naturally occurring cavity, 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 human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. XSnags 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 = 3 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habita	1
	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 1/2 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 developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	
To The joint I grow page 0	 H 2 TOTAL Score = opportunity for providing habitat Add the scores from H2 L H2 2 H2 3 H2 4 II	1.7
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1 15		

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

l Estuary Reserve, Natural
ve designated under WAC Cat. 1
onditions?
Cat. I
ultivation, grazing, and has tina spp,. are only species
ven a dual rating (I/II).
ndisturbed upper marsh he area of Spartina in
Dual
shrub, forest, or un-grazed Rating
pressions with open water, I/II
eritage Program/DNR as
ened, Endangered, or
al heritage wetland? (This
NR.)
P/DNR web site X
2.2 NO X
site with state threatened
Cat I
age Wetland
d vegetation in bogs? Use
still need to rate the
still need to rate the
er peats or mucks, that
ppendix B for a field key to
uestion 2
han 16 inches deep over
are floating on a lake or
a bog for purpose of rating other plants, if present,
of the vegetation (more
Table 3)?
uestion 4
you may substitute that
east 16" deep. If the pH is
and is a bog.
rn red cedar, western n white pine. WITH any of
ible 3 as a significant
aceous cover)? Cat. I
e of rating
cccccccccccccccccccccccccccccccccccccc

~ ~ 4	Forested Wotlands (see p. 00)						
SC4	Forested Wetlands (see p. 90)						
	Does the wetland 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 function.						
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a						
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or						
	more).						
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees						
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diamete Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years of the OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less that						
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.						
	YES = Category I $NO = X_{}$ not a forested wetland with special characteristics	Cat. I					
	· ·						
SC5	Wetlands in Coastal Lagoons (see p. 91) Does the wetland most all of the following criteric of a wetland in a coastal lagoon?						
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?						
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated						
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.						
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5						
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the						
	bottom.)						
	YES = Go to SC 5.1 NO $X_{\underline{\underline{}}}$ not a wetland in a coastal lagoon						
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has						
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).						
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed						
	or un-mowed grassland.	Cat. I					
	The wetland is larger than 1/10 acre (4350 square ft.)						
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} \ = \mathbf{Category} \ \mathbf{II}$	Cat. II					
SC6	<u>Interdunal Wetlands</u> (see p. 93)						
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or						
	WBUO)?						
	YES = Go to SC 6.1 NO X not 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:						
	• Long Beach Peninsula lands west of SR 103						
	• Grayland-Westport lands west of SR 105						
	Ocean Shores-Copalis – lands west of SR 115 and SR 109						
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?						
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II					
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?						
	YES = Category III	Cat. III					
	Category of wetland based on Special Characteristics						
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.						
	If you answered NO for all types enter "Not Applicable" on p. 1						

Wetland name or number: O

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 w	etland (if known): Wetland O			_	
Date of site	e visit: 6/18/12				
Rated by:	J. Dadisman	Trained by	Ecology? Yes X No	_ Date of tra	nining: <u>11/06</u>
SEC: 07	TWNSHP: 27 N	RNGE: 02 E	E Is S/T/R in Appendix	D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size_		<u></u>
		SUMMA	RY OF RATING		
Category b	pased on FUNCTIONS provided	by wetland:	I II	IIIX	X IV
	Category I = Score > 70		Score for Water Quality Fur	nctions	16
	Category II = Score 51 - 69		Score for Hydrologic Fur	nctions	10
	Category III = Score 30 – 50		Score for Habitat Fur	nctions	17
	Category IV = Score < 30		TOTAL Score for Fur	nctions	43
Category b	ased on SPECIAL CHARACTER	ISTCS of We	tland I II	Doe	es not apply X
	Final Cates	gory (choos	e the "highest" category from	above")	III
	Summary of basic	information	about the wetland unit.	-	
	Final Category (choose the "highest" category from above") Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Wetland HGM Class used for Rating				
	Estuarine		Used for Rating Depressional	X	

Wetland Unit has Special Characteristics		Wetland HGM Class 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	X	Check if unit has multiple HGM classes present

X

Wetland name or number: O

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 – so 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 a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.
	$(NO - \mathbf{g})$ 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 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) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	(NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	X The wetland is on a slope (slope can be very gradual).
	X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO – go to 5 $(YES -)$ The wetland class is Slope
5	
5.	Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it gets in undeted by everybork flooding from that stream or
	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 of
٠.	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 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 classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38)
ו ע	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.50)
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	3
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 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 ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	3
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	2
	 Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 	_
	• Area seasonally ponded is $< 1/4$ total area of wetland	
	Map of Hydroperiods	<u>_</u>
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several 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, farmed fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	2
	YES multiplier is 2 NO multiplier is 1	2
♦	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	16
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	• Unit is a depression with no surface water leaving it (no outlet)	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	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 the outlet	
	 The wetland is a "headwater" wetland	3
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	
D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
1	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	Multiplier
1	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	

Wetland name or number: O

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. — Wetland is in a headwater of a river or stream that has flooding problems. — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	
	stream that has flooding problems Other	1
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	10

Thes	e questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover)	Figure
	X Forested (areas where shave > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	
	H 1.2 Hydroperiods (see p.73):	D •
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland 2 points	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "bigh"	Figure
	None = 0 points Low = 1 point	0
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	0
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	3

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers (see P. 80): 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 = 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripari or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that ar least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads are considered breaks in the corridor). YES = 4 points (go to 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 ripari or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connect estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lal fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	e at s,

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	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
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).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
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/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%; crown cover may be less that	
100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less	
than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
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. 158).	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of	1
a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	1
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.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, 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 human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May	
be associated with cliffs.	
XSnags 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)	
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 1/2 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 developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	5
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	14
	
TOTAL for H 1 from page 8	
Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	17

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.				
SC1	Estuarine wetlands? (see p.86)				
501	Does the wetland unit meet the following criteria for Estuarine wetlands?				
	The dominant water regime is tidal,				
	Vegetated, and				
	With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X				
	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. 1			
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?				
	YES = Category I NO = Category II The westland is relatively and introduced (hear and iting a displayer filling a subjection proving and hear	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 Spartina spp, are 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	Cat. II			
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual Rating I/II			
SC2	Natural Heritage Wetlands (see p. 87)				
302	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as				
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or				
	Sensitive plant species.				
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This				
	question is used to screen out most sites before you need to contact WNHP/DNR.)				
	S/T/R information from Appendix D or accessed from WNHP/DNR web site X				
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X				
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species?	Cat I			
	YES = Category 1 NO X not a Heritage Wetland				
SC3	Bogs (see p. 87)				
	Does the wetland (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 function.				
	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 soil profile? (See Appendix B for a field key to				
	identify organic soils)? YES = go to question 3 NO = go to question 2				
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over				
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or				
	pond? YES = go to question 3 $NO = is \text{ not a bog for purpose of rating}$				
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,				
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more				
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?				
	YES = Is a bog for purpose of rating $NO = go$ to question 4				
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that				
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is				
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.				
	4. Is the 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)?	Cot I			
	YES = Category I NO = Is not a bog for purpose of rating	Cat. I			
	- 15 not a bog for purpose of fatting				

SC4	Forested Wetlands (see p. 90)				
	Does the wetland 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 function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	less than that found in old-growth.	Cat. I			
	YES = Category I $NO = X_{\underline{}}$ not a forested wetland with special characteristics				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
303	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated				
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.				
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon				
	SC 5.1 Does the wetland meet all of the following three conditions?				
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has				
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 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 ft.)				
	YES = Category I NO = Category II	Cat. II			
000	Interdunal Wetlands (see p. 93)	Cat. 11			
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO X not 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:				
	Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$YES = Category II \qquad NO = go to SC 6.2$				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
♦	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1				

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 v	wetland (if known): Wetland P			_	
Date of si	te visit: 11/19/12				
Rated by:	J. Dadisman Train	ned by Ecolog	y? Yes X No Date of t	raining: 11/06	5
SEC: 7	TWNSHP: 27 N	RNGE: 02 E	Is S/T/R in Appendix	D? Yes	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size_		_
		SUMMA	RY OF RATING		
Category	based on FUNCTIONS provided	by wetland:	I II	III	IV <u>X</u>
	Category I = Score > 70		Score for Water Quality Fun	ctions	16
	Category II = Score 51 - 69		Score for Hydrologic Fun	ctions	4
	Category III = Score 30 – 50		Score for Habitat Fun	ctions	9
	Category IV = Score < 30		TOTAL Score for Fun	ections	29
Category	based on SPECIAL CHARACTER	ISTCS of Wet	tland I II	Does	not apply X
	Final Cate	gory (choose	e the "highest" category from	above")	IV
	Summary of basic	information	about the wetland unit.	<u>L</u>	
	Wetland Unit has Speci Characteristics		Wetland HGM Class used for Rating		
	Estuarine		Depressional		
	Natural Heritage Wetlan	d	Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope	X	
	Old Growth Forest		Flats		
	Coastal Lagoon		Freshwater Tidal		
	Interdunal None of the above	X	Check if unit has multiple		

Wetland name or number: P

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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 – so 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 a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call 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 only source (>90%) of water to it. Groundwater and surface water
۷.	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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
•	X The wetland is on a slope (slope can be very gradual).
	X 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.
	X The water leaves the wetland without being impounded?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hymmocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 (YES –) The wetland class is Slope
5.	Does the entire wetland 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 of
	the year. This means that any outlet, if present is higher than the interior of the wetland. NO - go to 7 YES - The wetland class is Depressional
_	
7.	Is the entire wetland 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
0	· · · · · · · · · · · · · · · · · · ·
8.	Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. 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

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

S	Slope Wetlands	Points	
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)	
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.64)	
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)points = 3 • Slope is 1% - 2%	2	
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = 0 points	0	
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants	Figure	
	 are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > 1/2 of area points = 2 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons	6	
	Total for S 1 Add the points in the boxes above	8	
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	(see p. 67)	
	X Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other	Multiplier 2	
	YES multiplier is 2 NO multiplier is 1		
♦	TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	16	
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
S 3	Does the wetland have the potential to reduce flooding and stream erosion?	(see p.68)	
2 2	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits 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, rigid vegetation covers > 90% of the area of the wetland points = 6 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0	0	
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2	
	Add the points in the boxes above	2	
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? <i>Note</i>	(see p. 70)	
	which of the following conditions apply. Wetland has surface runoff that drains to a river or stream that has flooding problems X Other A building is directly downslope of the wetland	Multiplier	
	which of the following conditions apply. —— Wetland has surface runoff that drains to a river or stream that has flooding problems	<u>2</u>	

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 scor per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?]
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.	Figure
	Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: Map of Cowardin vegetation classes	0
	4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure
	Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X Saturated only 1 type present points = 1 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland Lake-fringe wetland 2 points	0
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and	Figure
	open water, the rating is always "high".	
	Use map of Cowardin classes [riparian braided channels]	0
	High = 3 points H 1.5 Special Habitat Features (see p. 77):	-
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)	0
	At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	
1	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	1

H 2	Does tl	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): 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". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 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 (go to 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	1

and 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) 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 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
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) 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 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	8
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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) 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 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
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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) 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 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
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) 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 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
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) 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 1/2 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 developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
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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) 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 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
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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) Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this	
and has I priority habitat = I point No habitats = 0 points	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient	
ciated with cliffs.	
Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of	
earshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open	
to provide functional life history requirements for instream fish and wildlife resources.	
nstream: The combination of physical, biological, and chemical processes and conditions that	
rairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	3
'estside Prairies: Herbaceous, non-forested plant communities that can either take the form of	
uatic and terrestrial ecosystems which mutually influence each other.	
, ,	
•	
tions do not have to be relatively undisturbed.	
of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the</i>	
vdfw.wa.gov/hab/phslist.htm)	
	of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the tions do not have to be relatively undisturbed. spen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). odiversity Areas and Corridors: Areas of habitat that are relatively important to various of native fish and wildlife (full descriptions in WDFW PHS report p. 152). erbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Id-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 pre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters in g 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that decay, decadence, numbers of snags, and quantity of large downed material is generally less at found in old-growth; 80 - 200 years old west of the Cascade crest. Pregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy ge of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of uatic and terrestrial ecosystems which mutually influence each other. estside Prairies: Herbaceous, non-forested plant communities that can either take the form of rairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that to provide functional life history requirements for instream fish and wildlife resources. earshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of the undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A). aves: A naturally occurring cavity, recess, void, or system of interconnected passages under the soils, ro

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.	
SC1	Estuarine wetlands? (see p.86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	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	Cat. 1
	332-30-151? YES = Category I NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The westland is relatively and introduction and living disching filling cultivation and had	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 Spartina spp, are only species	
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual
	or un-mowed grassland	Rating I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water,	1/11
	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	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 X	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (see p. 87)	
BCJ	Does the wetland (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 function.	
	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 soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 $NO = go$ to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the 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)?	Cat. I
	$\mathbf{YES} = \text{Category I} \qquad \qquad \mathbf{NO} = \text{Is not a bog for purpose of rating}$	Cat. 1

SC4	Forested Wetlands (see p. 90) Does the wetland 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 function.		
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or		
	more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old growth.	C-4 I	
	less than that found in old-growth. YES = Category I NO = X not a forested wetland with special characteristics	Cat. I	
SC5	Wetlands in Coastal Lagoons (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks. The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.) YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon		
	SC 5.1 Does the wetland meet all of the following three conditions?		
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed		
	or un-mowed grassland.	Cat. I	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cut. 1	
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} \ = \mathbf{Category} \ \mathbf{II}$	Cat. II	
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not 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: • Long Beach Peninsula lands west of SR 103 • Grayland-Westport lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109		
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?		
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II	
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	C-4 III	
	Category of wetland based on Special Characteristics	Cat. III	
	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.		
	If you answered NO for all types enter "Not Applicable" on p. 1		
	A CONTRACT OF THE STREET AND A CONTRACT OF THE STREET		

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 w	vetland (if known): Wetland Q			_	
Date of sit	e visit: 12/14/12				
Rated by:	J. Dadisman and L. Berntsen_	Trained	by Ecology? Yes X No	_ Date of trai	ning: 11/06 (JD)
SEC: 7	TWNSHP: 27N	RNGE: 02E	Is S/T/R in Appendix	D? Yes	NoX
	Map of wetland unit:	Figure	Estimated size		_
		SUMMA	ARY OF RATING		
Category	based on FUNCTIONS provided b	y wetland:	I II	III	IV <u>X</u>
	Category I = Score > 70		Score for Water Quality Fund	ctions	10
	Category II = Score 51 - 69		Score for Hydrologic Fun	ctions	4
	Category III = Score 30 – 50		Score for Habitat Fun	ctions	15
	Category IV = Score < 30		TOTAL Score for Fun	ctions	29
Category I	based on SPECIAL CHARACTERIS	STCS of We	tland I II	Does	not apply X
	Final Categ	ory (choos	se the "highest" category from a	above")	IV
	Summary of basic	information	about the wetland unit.		
	Wetland Unit has Specia Characteristics	ıl	Wetland HGM Class used for Rating		
	Estuarine		Depressional	X	
	Natural Heritage Wetland	l	Riverine		
	Bog		Lake-fringe		
	Mature Forest		Slope		
	Old Growth Forest		Flats		
	Coastal Lagoon		Freshwater Tidal		
	Interdunal				
	None of the above	X	Check if unit has multiple		

Wetland name or number: Q

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need 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 animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
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 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
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.		X

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

Classification of Vegetated Wetlands for Western Washington

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.

YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuaria If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwat is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system.	
If yes, is the salinity of the water during periods of annual low. Tow 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 a Saltwater Tidal Fringe to the first and second editions of the rating system are call water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier edition this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Indic, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p). The entire wetland unit is falt and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit. NO _eo to 3 YES – The wetland class is Flats If your wetland can be classified as a "Flats" wetland, use the form for Depressional wetlands. Does the entire wetland 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) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? No _eo to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe) 4. Does the entire wetland meet all of the following criteria? The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. 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 types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot NO _go to 5 YES – The wetland class is Slope 5. Does the entire wetland unit in a topographic depression in which water pinds, or i	
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwat is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system.	`
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this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland	l is kept. Please
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	face water
	race water
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U	
	ıt any
At least 30% of the open water area is deeper than 6.6 (2 m)?	
	(e)
4. Does the entire wetland meet all of the following criteria?	
	n seens It may
	1 seeps. It may
	mall and
	an 1 joot aeep).
	hat stream or
The unit is in a valley or stream channel where it gets inundated by overbank flooding from t river.	hat stream or
The unit is in a valley or stream channel where it gets inundated by overbank flooding from t river.	hat stream or
The unit is in a valley or stream channel where it gets inundated by overbank flooding from t 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	
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The unit is in a valley or stream channel where it gets inundated by overbank flooding from t 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 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,	not flooding
The unit is in a valley or stream channel where it gets inundated by overbank flooding from t 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 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, the year. This means that any outlet, if present is higher than the interior of the wetland.	not flooding
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The unit is in a valley or stream channel where it gets inundated by overbank flooding from to 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 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, 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 located in a very flat area with no obvious depression and no overbank flooding. The pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the a 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 classes. For example, see slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along it	at some time of e unit does not trea. The eps at the base of a s sides. GO O DIFFERENT ss to use for the

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	Treat as ESTUARINE under wetlands with special
freshwater wetland	characteristics

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) $(see p.38)$
ו ע	D 1.1 Characteristics of surface water flows out of the wetland:	(see p.30)
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• 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 ditchpoints = 1	3
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	rigure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	3
	Map of Cowardin vegetation classes	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	Figure
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	rigure
	• Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/4 total area of wetland	4
	• Area seasonally ponded is < 1/4 total area of wetland	-
	Map of Hydroperiods	<u> </u>
	Total for D 1 Add the points in the boxes above	
2	Does the wetland have the opportunity to improve water quality?	(see p. 44
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several 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, farmed	
	fields, roads, or clear-cut logging	
	Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplie
	Wetland is fed by groundwater high in phosphorus or nitrogen	1
	Other YES multiplier is 2 NO multiplier is 1	1
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	10
,	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
3	Does the wetland have the potential to reduce flooding and erosion?	(see p.46)
, ,	D 3.1 Characteristics of surface water flows out of the wetland unit	(SEE PEEE)
	• Unit is a depression with no surface water leaving it (no outlet)points = 4	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	
	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 the outlet	
	• The wetland is a "headwater" wetland	0
	 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ftpoints = 0	
	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 less than 10 times the area of unit	
	• The area of the basin is 10 to 100 times the area of the unit	0
	• The area of the basin is more than 100 times the area of the unitpoints = 0	
	• Entire unit is in the FLATS class	<u> </u>
	Total for D 3 Add the points in the boxes above	4
) 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
-	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity,	Multiplier
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive	wintiplier
	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	
	Saw, map varye, reserven etc. Or you estimate that more than 70/0 of the water in the wettand is from	1

Wetland name or number: Q

	groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or		
	stream that has flooding problems Other	1	
	YES multiplier is 2 NO multiplier is 1		
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	4	

Thes	se questi	ions apply to wetlands of all HGM classes.	Points (only 1 score	
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.			
H 1	Does the wetland have the potential to provide habitat for many species?			
	H 1.1 <u>Vegetation structure</u> (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed			
		X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)	0	
		If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.		
		Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 Map of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0		
	H 1.2	Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).	Figure	
		Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Lake-fringe wetland	0	
		Freshwater tidal wetland = 2 points Map of hydroperiods		
	Н 1.3	Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
	H 1.4	Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure	
	(None = 0 points Low = 1 point Moderate = 2 points Use map of Cowardin classes High = 3 points [riparian braided channels]	0	
	H 1.5	Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	0	
		H 1 TOTAL Score – potential for providing habitat Add the points in the column above	1	

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): 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". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 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 (go to 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	4

Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedroc 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/trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average dia 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 than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where ca coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the fa dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and condition interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coostal Nearshore, coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages utearth in soils, rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailing be associ	e /ha (8 ameters at y less anopy s of both form of ans that, Open of ander the it), gs. May cient er at ty logs
list. Nearby wetlands are addressed in question H 2.4)	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits • There are at least 3 other wetlands within 1/2 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 developmentp • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	points = 5 points = 5 points = 3 points = 2 points = 0
The second secon	12.3, H2.4 14
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H TOTAL for H 1 fro ↑ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the resu	om page 8 1

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		~ _	- Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
		are met.	1.0 (00)	
SC1	Estuarine wetlands? (see p.86)			
			wetland unit meet the following criteria for Estuarine wetlands? dominant water regime is tidal,	
			etated, and	
			h a salinity greater than 0.5 ppt.	
			YES = Go to SC 1.1 NO X	
	SC 1.1	Is the wetl	land unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural	
			erve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC	Cat. 1
	332-30-151? YES = Category I $NO = go \text{ to } SC 1.2$			
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?			
			YES = Category I NO = Category II	Cat. I
		The	wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	O 2
		less	than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp, are only species cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
		The	area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
		with	n native species would be a Category 1. Do not, however, exclude the area of Spartina in	
		dete	ermining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland			Rating
		The	wetland has at least 2 of the following features: tidal channels, depressions with open water, ontiguous freshwater wetlands.	I/II
SC2	Natura		Wetlands (see p. 87)	
3C2			eritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
			n quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
			plant species.	
	SC 2.1		land 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 X			
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO \underline{X}			
	SC 2.2		identified the wetland as a high quality undisturbed wetland or as a site with state threatened	~
		or endange	ered plant species?	Cat I
	D /	07)	$YES = Category 1 \qquad NO X not a Heritage Wetland$	
SC3	Bogs (S	see p. 87)	visitional (or any pout of the unit) most both the criteria for sails and vigastation in base? Use	
			wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use clow to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		-	ased on its function.	
			the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
			ose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
			ify organic soils)? YES = go to question 3 $NO = go$ to question 2	
			the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedro	ock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond'		
			the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
			st of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 3	30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		MOTI	YES = Is a bog for purpose of rating NO = go to question 4 E: If you are uncertain about the extent of mosses in the understory you may substitute that	
			ion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
			han 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
			unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
			ock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
			pecies (or combination of species) on the bog species plant list in Table 3 as a significant	
			onent of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
			$YES = Category I \qquad NO = Is not a bog for purpose of rating$	

SC4	Forested Wetlands (see p. 90)			
	Does the wetland 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 function.			
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a			
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)			
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or			
	more).			
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees			
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW			
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.			
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old			
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than			
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally			
	less than that found in old-growth.	Cat. I		
	YES = Category I $NO = X$ not a forested wetland with special characteristics			
SC5	Wetlands in Coastal Lagoons (see p. 91)			
503	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?			
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated			
	from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.			
	The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5			
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the			
	bottom.)			
	YES = Go to SC 5.1 NO \underline{X} not a wetland in a coastal lagoon			
	SC 5.1 Does the wetland meet all of the following three conditions?			
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has			
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).			
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed			
	or un-mowed grassland.	Cat. I		
	The wetland is larger than 1/10 acre (4350 square ft.)	Cut. 1		
	YES = Category I NO = Category II	Cat. II		
SC6	Interdunal Wetlands (see p. 93)			
SCO	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or			
	WBUO)?			
	YES = Go to SC 6.1 NO \underline{X} not 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:			
	• Long Beach Peninsula lands west of SR 103			
	• Grayland-Westport lands west of SR 105			
	Ocean Shores-Copalis – lands west of SR 115 and SR 109 CG (1 L)			
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?			
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II		
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?			
	YES = Category III	Cat. III		
	Category of wetland based on Special Characteristics			
◆	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.			
	If you answered NO for all types enter "Not Applicable" on p. 1			

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