

## **Wetland Verification Report**

Thorndyke Resource  
Jefferson County, Washington

*for*  
**Jefferson County Department of Community  
Development**

December 11, 2013



**GEOENGINEERS**   
Earth Science + Technology

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**File No. 12060-001-01**

**December 11, 2013**


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## INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) was authorized to conduct wetland verification services at the Thorndyke Resource property in Jefferson County, Washington (Figure 1 – Vicinity Map) in conjunction with preparation of the Thorndyke Resource (TR) Draft Environmental Impact Statement. The proposed project is to build a Central Conveyor and Pier to move sand and gravel from the new TR Meridian Extraction area to an Operations Hub via the Little Wahl Conveyor, then on to Hood Canal via a new Central Conveyor and pier, for marine transport by barges and ships.

This report has been prepared to document and update existing baseline conditions within the proposed area of the Central Conveyor, Little Wahl Conveyor and the Meridian Extraction Area. A full wetland and stream delineation over the entire site was not conducted as part of this scope of work. GeoEngineers has prepared this Critical Areas Assessment Report in accordance with the requirements of Jefferson County Code (JCC) Chapter 18.22 (Critical Areas) but this project is vested under the previous wetland regulations (JCC 18.15) as more fully described below.

### Wetland Verification Purpose

The project site has been investigated several times with the most recent wetland delineation occurring in 2001 (Krazan and Associates, 2003). Regulatory agencies accept wetland delineations as valid for 5 years and require that the wetland boundaries be re-verified if a project is still under permit review 5 years after the original delineation. Therefore the purpose of this wetland verification was to verify that wetland boundaries have not changed since the original 2001 wetland delineations. In addition, both the State of Washington Department of Ecology system for rating wetlands and the Jefferson County wetland regulations have changed since the 2003 wetland report was written. These changes resulted from including Best Available Science (BAS) in wetland analysis. Although the Thorndyke Resource project is vested under the Jefferson County regulations as of April 23, 2003 (date the application was determined to be “substantially complete”), the applicant has agreed to update the analysis based on new information from BAS, the new Ecology rating system (2008), and the new Jefferson County regulations. Thus, data for the wetlands addressed in this report includes both the original (2003) rating and buffer requirements (per the previous JCC 18.15.340), as well as the current (2013) rating and buffer requirements (JCC 18.22). Jefferson County Code 18.15.340 established wetland buffer widths based on only the category of a wetland. The newer JCC 18.22.330 establishes wetland buffer widths based on the category of a wetland, habitat function points, and the proposed land use.

### Scope of Work

As described in the June 18, 2013 signed agreement memorandum between Lisa Berntsen and Dan Baskins, GeoEngineers was authorized to perform wetland reconnaissance activities on the Thorndyke Resource property. The wetland reconnaissance was not conducted over the entire site; only certain areas potentially disturbed by the proposed project were evaluated during the investigation. These areas included: Little Wahl Conveyor, Meridian Extraction Area and the Central Conveyor.

GeoEngineers did not re-delineate boundaries, rather only investigated previously identified wetlands within 300 feet of the specified work areas. Wetlands within 300 feet of the work areas

were identified based on a CAD file submitted to GeoEngineers on behalf of Dan Baskins. Figures 1 through 13 of this Report depict the wetland areas that have been verified by other consultants and wetland areas verified by GeoEngineers. A total of 29 wetlands were identified from the 2003 delineation report, in multiple Forest Practice Application (FPA) permits and in the field. GeoEngineers was tasked with verifying wetland boundaries and/or re-categorizing a total of 17 wetlands. Table 1 below lists the 29 wetlands previously identified, including the 17 wetlands GeoEngineers was tasked to evaluate. The wetlands evaluated by GeoEngineers are bolded in the table below.

**TABLE 1. AREA OF WETLAND VERIFICATION**

<b>Wetland Name</b>	<b>Previously Delineated</b>	<b>Approximate Location</b>	<b>GeoEngineers Tasks</b>
<b><i>Meridian Extraction Area</i></b>			
<b>Wetland O</b>	<b>No</b>	<b>Southwest Corner</b>	<b>Delineate east edge and categorize</b>
<b>Wetland P</b>	<b>No</b>	<b>Southwest Corner</b>	<b>Delineate wetland and categorize</b>
<b>Wetland Q (Lost Lake)</b>	<b>No</b>	<b>Eastern area</b>	<b>Categorize wetland</b>
<b>W3</b>	<b>Identified in the Triploid FPA</b>	<b>Southeast of the corridor</b>	<b>Verify boundaries and categorize</b>
<b>W2</b>	<b>Identified in the Triploid FPA</b>	<b>Southeast of the corridor</b>	<b>Categorize wetland</b>
<b>W1</b>	<b>Identified in the Triploid FPA</b>	<b>Southeast of the corridor</b>	<b>Categorize wetland</b>
Wetland GG	Yes (Reclamation Map)	Southwest of the corridor	More than 300 feet from Little Wahl Conveyor– no tasks proposed
Wetland G	Yes (Reclamation Map)	Southwest of the corridor	More than 300 feet from Little Wahl Conveyor – no tasks proposed
<b>Wetland H</b>	<b>Yes (Reclamation Map)</b>	<b>Southwest of the corridor</b>	<b>Categorize wetland</b>
Wetland D	Yes (Reclamation Map)	Southwest of the corridor	More than 300 feet from Little Wahl Conveyor– no tasks proposed
<b><i>Central Conveyor (from north to south along the corridor)</i></b>			
Wetland E (Twin Lakes)	Yes (Reclamation Map)	North of Wahl Conveyor	More than 300 feet from Central Conveyor– no tasks proposed
<b>Wetland J</b>	<b>Yes (2003 Report)</b>	<b>North end of Central Conveyor</b>	<b>Verify wetland boundaries</b>
Wetland F	Yes (2003 Report)	North end of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed
<b>Wetland H</b>	<b>Yes (2003 Report)</b>	<b>North end of Central Conveyor</b>	<b>Verify wetland boundaries</b>
Wetland G	Yes (2003 Report)	North end of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed

Wetland Name	Previously Delineated	Approximate Location	GeoEngineers Tasks
<b>Wetland E (Pheasant Lake)</b>	<b>Yes (2003 Report)</b>	<b>Near central part of Central Conveyor</b>	<b>Verify wetland boundaries</b>
<b>Wetland I</b>	<b>Yes (2003 Report)</b>	<b>Near central part of Central Conveyor</b>	<b>Verify wetland boundaries</b>
Wetland D (W1 from FPA)	2003 Report and Grand Central FPA	Near central part of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed
W2	Identified in the Grand Central FPA	Near central part of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed
W3	Identified in the Grand Central FPA	Near central part of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed
W4	Identified in the Grand Central FPA	Near central part of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed
W5	Identified in the Grand Central FPA	Near central part of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed
<b>Wetland C</b>	<b>Yes (2003 Report)</b>	<b>Near central part of Central Conveyor</b>	<b>Verify wetland boundaries</b>
<b>Wetland M</b>	<b>Yes (2003 Report)</b>	<b>Near south part of Central Conveyor</b>	<b>Verify wetland boundaries</b>
Wetland L	Yes (2003 Report)	Near south part of Central Conveyor	More than 300 feet from Central Conveyor– no tasks proposed.
<b>Wetland K</b>	<b>Yes (2003 Report)</b>	<b>Near south part of Central Conveyor</b>	<b>Verify wetland boundaries</b>
<b>Wetland A</b>	<b>Yes (2003 Report)</b>	<b>Along shoreline</b>	<b>Verify wetland boundaries</b>
<b>Wetland B</b>	<b>Yes (2003 Report)</b>	<b>Along shoreline</b>	<b>Verify wetland boundaries</b>
<b>Wetland R</b>	<b>No</b>	<b>Along Shoreline, South of conveyor</b>	<b>Categorize wetland. More than 300 feet from Central Conveyor. However, identified for wetland mitigation</b>
<b>Total Number of Wetlands to Categorize, Delineate or Verify Wetland Boundaries</b>			<b>17</b>

## PROJECT LOCATION AND SITE DESCRIPTION

The site is located in the eastern portion of Jefferson County, Washington (Figure 1) between Squamish Harbor and Thorndyke Bay on, and upland of, the shores of Hood Canal. The project area is located within long-term forest production lands owned by Pope Resources and managed by Olympic Resource Management, and also includes one privately owned waterfront parcel. The project area is located in the Thorndyke Block of the Hood Canal Tree Farm, which occupies approximately 21,000 acres along Highway 104. The areas investigated are located in

Sections 12 and 01 of Township 27 north and Range 1 west and Sections 06, 07, 08, 17 and 18 of Township 27 north and Range 1 east of the Willamette Meridian.

The Thorndyke Block land use is long-term timber production. Logging of all areas is imminent over time. Logged since the early to mid-1900s, the predominant character is second-growth timber. Many portions of the site have been logged within the past 20 years and are either clear of vegetation or covered with forest brush and shrubs. Forested areas are dominated by either a Douglas fir (*Pseudotsuga menziesii*) canopy with an understory dominated by California huckleberry (*Vaccinium ovatum*) or a red alder (*Alnus rubra*) canopy with an understory dominated by salmonberry (*Rubus spectabilis*) and sword fern (*Polystichum munitum*). A network of logging roads extends throughout the site providing access. Several mining operations are also located within the Thorndyke Block. Figure 14 contains the May 2013 Google Earth aerial photograph of the site and depicts areas of recent logging and existing forested habitat.

## PROJECT DESCRIPTION

Thorndyke Resource is proposing to construct a Central Conveyor and Pier to move sand and gravel from upland mining operations (i.e., the Meridian Extraction Area) to a shoreline load-out facility for marine transport of sand and gravel to local, regional, intra-state, and inter-state markets.

### Meridian Extraction Area

The 525-acre Meridian Extraction Area is located generally south of Wahl Lake. The exact timing of a prospective application for the Meridian Extraction Area will be a function of future market demand and successful development of the Central Conveyor and Pier.

### Central Conveyor and Pier

The proposed 4-mile Central Conveyor originates at the southwest corner of the Operations Hub, travels south within an approximately 34-acre easement, bridges over Thorndyke Road, crosses a 14.7-acre parcel of waterfront property and terminates at the end of the proposed 1,000-foot pier extending into Hood Canal.

The Pier will originate at the waterfront parcel and will be located approximately 5 miles southwest of the Hood Canal Bridge, one mile northeast of Thorndyke Bay and 1.25 miles southwest of South Point. The Pier is designed for ships and barges of various sizes and displacements to transport sand and gravel.

## WETLAND VERIFICATION

### Paper Inventory

Environmental maps of the project area were collected and reviewed as part of a paper inventory.

### Mapped Soil Information

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey indicates several soil types throughout the project area. Figure 15

(NRCS Soils Map) depicts soils within the project area. The following soil types are mapped within the investigated wetland areas (USDA-NRCS, 2013a):

**TABLE 2. MAPPED SOIL TYPE BY INVESTIGATED WETLAND**

<b>Wetland Name</b>	<b>Mapped Soil Type</b>
Wetland O	Swantown gravelly sandy loam, 0 – 8 percent slopes
Wetland P	Swantown gravelly sandy loam, 0 – 8 percent slopes
Wetland W3	Dabob very gravelly sandy loam, 0 – 15 percent slopes
Wetland W2	Dabob very gravelly sandy loam, 0 – 15 percent slopes
Wetland W1	Dabob very gravelly sandy loam, 0 – 15 percent slopes
Wetland H	Dabob very gravelly sandy loam, 0 – 15 percent slopes
Wetland J	Dabob very gravelly sandy loam, 0 – 15 percent slopes
Wetland H	Dabob very gravelly sandy loam, 0 – 15 percent slopes
Pheasant Lake (Wetland E)	Sinclair gravelly sandy loam, 0 – 15 percent slopes
Wetland I	Sinclair gravelly sandy loam, 0 – 15 percent slopes
Wetland C	Semiahmoo muck, shallow variant
Wetland K	Everett gravelly sandy loam, 0 – 15 percent slopes
Wetland M	Everett gravelly sandy loam, 0 – 15 percent slopes
Wetland A	Cassolary sandy loam, 0 – 15 percent slopes
Wetland B	Coastal Beaches
Wetland R	Coastal Beaches

Swantown gravelly sandy loam soils and semiahmoo muck, shallow variant soils are hydric soils (USDA-NRCS, 2012). Dabob very gravelly sandy loam soils, Sinclair gravelly sandy loam soils, Everett gravelly sandy loam soils, Cassolary sandy loam soils and Coastal Beaches are not hydric and do not contain hydric inclusions (USDA-NRCS, 2012).

#### ***Mapped NWI Information***

The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online mapper (USFWS, 2013) shows multiple wetland areas within the project boundary. Most of the identified wetlands are palustrine systems that are permanently and seasonally flooded. However, the Hood Canal shoreline is mapped as Estuarine Subtidal Unconsolidated Bottom with a subtidal water regime (E1UBL). Figure 16 (NWI Map) depicts the mapped wetland systems on and adjacent to the project areas.

#### ***Mapped Natural Heritage Program Information***

As part of the wetland verification work, the Washington State Department of Natural Resources (DNR) Natural Heritage Program (NHP) was checked to see if rare or endangered plants or plant communities have been identified within the project area. Several areas adjacent to the project site are identified by DNR as NHP systems (Figure 17). However, all but three are more than

300 feet from the project area and should not be affected by the project. Wetlands W1, W2 and W3 are located along the northeast boundary of the Meridian Extraction Area and the buffer extends into the Meridian Extraction Area. They are mapped as low elevation freshwater wetlands that contain a plant community of Douglas spirea, western inflated sedge and yellow pond lily. These plant species are not listed as rare according to the DNR list of Rare Plant Occurrences in Jefferson County (DNR, 2013). There should be no impacts to these wetlands or the associated buffers as work will likely not extend into the buffers.

### **Mapped Stream Information**

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). Numerous streams are mapped throughout the project area and are depicted on Figure 16. The following wetlands that were investigated have associated mapped streams associated.

**TABLE 3. MAPPED STREAMS ASSOCIATED WITH INVESTIGATED WETLANDS**

<b>Wetland Name</b>	<b>Stream Description</b>	<b>Fishbearing Status</b>
Wetland O	Tributary to Thorndyke Creek, flowing south through the wetland. Flowing water was heard (not observed) in the south portion of the wetland, just off the Meridian Extraction Area.	Non-fishbearing
Wetland W3, W2, W1 and Lost Lake	A stream is mapped extending through all four wetland systems but not connecting to anything north or south of the stream. This stream was not observed and likely does not exist.	Non-fishbearing
Wetland Q (Lost Lake)	Lost lake is mapped as a fishbearing pond. WDFW does not map any salmonids within the lake.	Fishbearing
Wetland E (Pheasant Lake)	A stream is mapped as flowing north through the wetland	Non-fishbearing
Wetland E (Pheasant Lake)	Pheasant Lake is mapped as a fishbearing pond. WDFW does not map any salmonids within the lake.	Fishbearing
Wetland C	Eight tributaries are mapped as crossing the existing access road and flowing into Wetland C. These tributaries likely do not currently exist as the investigation looked for these areas and did not identify them.	Non-fishbearing
Wetland C	A tributary to an unnamed stream is mapped flowing north through Wetland C. This stream is visible from aerial photographs and is assumed to be present. WDFW maps coho as being presumed within the stream.	Fishbearing
Wetlands M and K	A stream is mapped between Wetlands K and M. While a defined channel was not observed, there was evidence of standing water and culverts connecting the two systems. Therefore water may flow through the areas during heavy rain events.	Non-fishbearing
Wetlands A and B	A stream is mapped as flowing south under Thorndyke Road and flowing through Wetlands A and B and discharging into Hood Canal. This stream was observed from Thorndyke Road and from Wetland B.	Non-fishbearing

## Field Investigation

GeoEngineers biologists conducted a field investigation over two days (July 25 and 26, 2013) to verify previously delineated wetland boundaries and characterize identified wetland habitat on the subject property. The project area south of Thorndyke Road was visited a second time on October 30, 2013 to identify habitat along the shoreline area on property currently owned by Thorndyke Resource. A total of 17 wetlands were reviewed as part of this project. Figures 1 through 13 contain the wetland locations. Other wetland systems that have been previously delineated are depicted on Figures 1 through 13, but were not investigated because they are more than 300 feet from the project areas (and are, therefore, not discussed below).

## Methods

**Krazan and Associates.** According to the Krazan and Associates 2003 report, delineation of aquatic critical areas (wetlands and streams) was conducted in accordance with guidelines presented in JCC Chapter 18.15 (Critical Areas), which included the use of the Washington State Wetlands Identification and Delineation Manual (Ecology, 1997).

**GeoEngineers.** GeoEngineers used the most current JCC (18.22) which included the use of the Washington State Wetlands Identification and Delineation Manual (Ecology, 1997) and the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) as well as the wetland delineation methodology as provided in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Regions (USACE, 2010) to review and verify the project wetland boundaries. GeoEngineers identified and characterized a total of 17 wetlands. We did not observe unmapped features that would be impacted during development of the Central Conveyor or Little Wahl Conveyor. However, Wetlands O and P located in the southwest corner of the Meridian Extraction Area and Wetland R located along the shoreline, were not previously identified or delineated in previous reports. These wetlands were newly identified by GeoEngineers.

GeoEngineers biologists verified wetland boundaries and located sample plots using a hand-held Trimble® GeoXT™ global positioning system (GPS) device. To make wetland determinations, we established formal data sample plots. The previously delineated wetland boundaries were loaded onto the GPS device to compare current wetland boundaries with the previously delineated boundaries. In addition, GeoEngineers biologists also rated each delineated wetland using the Washington State Wetland Rating System for Western Washington (Hruby, 2008) as specified in JCC Chapter 18.22 Article VII (Wetlands) Section 18.22.300 (classification/designation). Appendices B and C include sample plot data forms and wetland rating forms, respectively.


Determination of buffer width for the wetlands was conducted in accordance with current Jefferson County regulations – JCC 18.22.330. This project is considered a high intensity land use because project components are associated with industrial uses (i.e. sand and gravel mining). Based on the JCC, wetlands can have the same category but require different buffer widths based on habitat function points. For instance, two category III wetland systems, one with less than 20 habitat functions points and one with more than 20 habitat functions points will have an 80-foot buffer and a 150-foot buffer, respectively.



Tables 4 through 18 below summarize information regarding the individual wetland critical area features as noted during the GeoEngineers field investigation. Table 19 provides a summary comparison of the individual wetland ratings (categories) based on both the previous and current (2008) Department of Ecology Rating Forms, and a comparison of required wetland buffer widths based on the previous and current Jefferson County regulations.




TABLE 4. WETLAND O

Wetland O – Information		
Location	Southwest corner of Meridian Extraction Area	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	N/A – not previously delineated	
Previous Buffer Width <sup>2</sup>	N/A – not previously delineated	
2008 Rating	III (42 points) <sup>3</sup>	
2013 Buffer Width	150 Feet <sup>4</sup>	
Size	Not determined, extends off site and only east side delineated.	
Cowardin Class	Palustrine Forested	
HGM Class	Sloping	
Description Summary		
Sample Plot	SP-2	
Vegetation	<b>Herbaceous:</b> Skunk cabbage ( <i>Lysichiton americanus</i> ), lady fern ( <i>Athyrium filix-femina</i> ) and field horsetail ( <i>Equisetum arvense</i> ). <b>Shrub:</b> Salmonberry ( <i>Rubus spectabilis</i> ) <b>Forested:</b> Red alder ( <i>Alnus rubra</i> )	
Soils	Soils met the hydric soils indicator for hydrogen sulfide (A4).	
Hydrology	<b>Indicators:</b> Water at 10 inches in the soil pit with saturation to the surface. <b>Source:</b> Direct precipitation, surface runoff, high groundwater table.	
Notes	Sloping system that is associated with a non-fishbearing stream. The stream is a tributary to Thorndyke Creek.	
Western Washington Wetland Rating Functions Summary (42 points total)		
Water Quality	<b>5 points:</b> due to vegetation coverage, having an un-constricted outlet and no development or sources of pollution within 150 feet upslope of the wetland	
Hydrologic	<b>16 points:</b> due to having an un-constricted outlet and vegetation coverage; draining to a stream that has flooding problems (opportunity for hydrologic functions).	
Habitat	<b>21 points:</b> due to having one vegetation class, 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 logging road is located along a portion of the eastern buffer and separates this wetland from a seep wetland to the north. However, the road does not appear to be used often and doesn't seem to be a buffer disruption. The wetland is immediately surrounded by young forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with lesser amounts of 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 California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), red elderberry ( <i>Sambucus racemosa</i> ), bracken fern ( <i>Pteridium aquilinum</i> ) and sword fern ( <i>Polystichum munitum</i> ).	

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

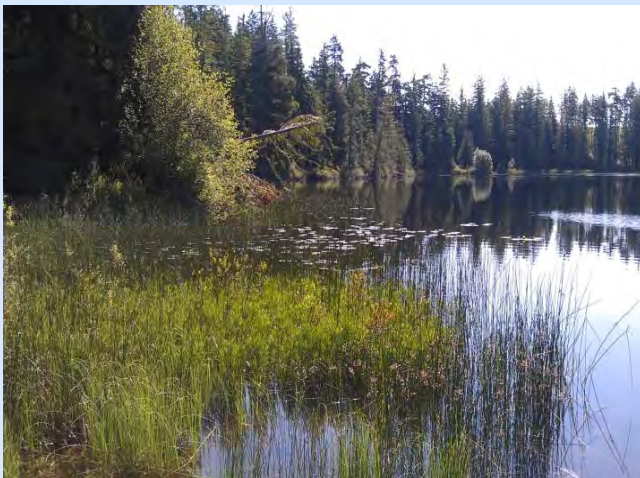
TABLE 5. WETLAND P

Wetland P – Information		
Location	Southwest corner of Meridian Extraction Area	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	N/A – not previously delineated	
Previous Buffer Width <sup>2</sup>	N/A – not previously delineated	
2008 Rating	IV (23 points) <sup>3</sup>	
2013 Buffer Width	50 Feet <sup>4</sup>	
Size	Approximately 300 square feet (estimated from site visit)	
Cowardin Class	Palustrine Emergent	
HGM Class	Sloping	
Description Summary		
Sample Plot	SP-1	
Vegetation	<b>Herbaceous:</b> Lady fern ( <i>Athyrium filix-femina</i> ), velvetgrass ( <i>Holcus lanatus</i> ) and field horsetail ( <i>Equisetum arvense</i> ). <b>Shrub:</b> None <b>Forested:</b> Red alder ( <i>Alnus rubra</i> ) saplings had been cut from within the ditch.	
Soils	Soils met the hydric soils indicator for hydrogen sulfide (A4).	
Hydrology	<b>Indicators:</b> Water at 14 inches in the soil pit with saturation to the surface. <b>Source:</b> direct precipitation, surface runoff, high groundwater table.	
Notes	Groundwater was observed in the ditch and water was flowing off site to the west.	
Western Washington Wetland Rating Functions Summary (23 points total)		
Water Quality	<b>5 points:</b> due to vegetation coverage, having an un-constricted outlet and no development or sources of pollution within 150 feet upslope of the wetland	
Hydrologic	<b>2 points:</b> due to having an un-constricted outlet and vegetation coverage; and having no opportunity for hydrologic functions because the seep is located in the bottom of a roadside ditch.	
Habitat	<b>16 points:</b> 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	A logging road is located along the southern edge of the ditch and separates this wetland from the alder forested wetland. However, the road does not appear to be used often and doesn't seem to be a buffer disruption. The wetland is immediately surrounded by young forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with lesser amounts of 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 California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), red elderberry ( <i>Sambucus racemosa</i> ), bracken fern ( <i>Pteridium aquilinum</i> ) and sword fern ( <i>Polystichum munitum</i> ).	

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krizan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 6. WETLAND Q (LOST LAKE)


Wetland Q – Lost Lake – Information		
Location	Eastern edge of Meridian Extraction Area	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	N/A – not in Krazan Report	
Previous Buffer Width <sup>2</sup>	N/A – not in Krazan Report	
2008 Rating	II (57 points) <sup>3</sup>	
2013 Buffer Width	150 Feet <sup>4</sup>	
Size	Not determined, extends off site and was not previously delineated	
Cowardin Class	Palustrine Forested, scrub/shrub, emergent and aquatic bed	
HGM Class	Depressional	
Description Summary		
Sample Plot	Sample Plot was not conducted because the wetland was not delineated during the field investigation.	
Vegetation	<b>Aquatic Bed:</b> Common duckweed ( <i>Lemna minor</i> ) and yellow pond lily ( <i>Nuphar lutea</i> ) <b>Herbaceous:</b> Lady fern ( <i>Athyrium filix-femina</i> ), slough sedge ( <i>Carex obnupta</i> ), Hardstem bulrush ( <i>Schoenoplectus acutus</i> ), and field horsetail ( <i>Equisetum arvense</i> ). <b>Shrub:</b> Salmonberry ( <i>Rubus spectabilis</i> ) and willow species ( <i>Salix spp.</i> ) <b>Forested:</b> Red alder ( <i>Alnus rubra</i> ) and willow species ( <i>Salix spp.</i> )	
Soils	N/A sample plot not conducted within this wetland	
Hydrology	<b>Indicators:</b> Standing water within the wetland and water marks on vegetation. <b>Source:</b> direct precipitation, surface runoff, high groundwater table.	
Notes	Depressional wetland system that was not delineated (only categorized).	
Western Washington Wetland Rating Functions Summary (57 points total)		
Water Quality	<b>6 points:</b> due to vegetation coverage, not having an outlet and no development or sources of pollution within 150 feet upslope of the wetland	
Hydrologic	<b>24 points:</b> due to not having an outlet and vegetation coverage; and there being man-made resources nearby that could be damaged by flooding (opportunity for hydrologic functions).	
Habitat	<b>27 points:</b> 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	Areas adjacent to the wetland have been clear cut; however, the wetland is immediately surrounded by young forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with lesser amounts of 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 California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), red elderberry ( <i>Sambucus racemosa</i> ), bracken fern ( <i>Pteridium aquilinum</i> ) and sword fern ( <i>Polystichum munitum</i> ).	

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 7. MERIDIAN EXTRACTION WETLAND H


Wetland H – Information		
Location	Eastern edge of Meridian Extraction Area	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	N/A – Not in Krazan Report	
Previous Buffer Width <sup>2</sup>	N/A – Not in Krazan Report	
2008 Rating	III (40 points) <sup>3</sup>	
2013 Buffer Width	150 Feet <sup>4</sup>	
Size	Approximately 5,597 square feet	
Cowardin Class	Palustrine scrub/shrub and emergent	
HGM Class	Depressional	
Description Summary		
Sample Plot	Sample Plot was not conducted because the wetland was not delineated during the field investigation.	
Vegetation	<b><u>Herbaceous:</u></b> Slough sedge ( <i>Carex obnupta</i> ) <b><u>Shrub:</u></b> Rose spirea ( <i>Spiraea douglasii</i> )	
Soils	N/A sample plot not conducted within this wetland.	
Hydrology	<b><u>Indicators:</u></b> Water marks on vegetation and algal mat. <b><u>Source:</u></b> Direct precipitation, surface runoff, high groundwater table.	
Notes	Depressional wetland system that was not delineated (only categorized). Adjacent clear cut appears to have been done more than 5 years ago and is considered normal conditions.	
Western Washington Wetland Rating Functions Summary (40 points total)		
Water Quality	<b><u>12 points:</u></b> due to vegetation coverage, not having an outlet and no development or sources of pollution within 150 feet upslope of the wetland	
Hydrologic	<b><u>7 points:</u></b> due to not having an outlet, vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions)	
Habitat	<b><u>21 points:</u></b> due to having two 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	Areas adjacent to the wetland have been clear cut; however, the wetland is immediately surrounded by forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with an understory that consists of California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), and sword fern ( <i>Polystichum munitum</i> ).	

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 8. WETLANDS W1, W2, AND W3

Wetlands W1, W2 and W3 – Information	
Location	Northeast corner of the Meridian Extraction Area
WRIA	17 – Quilcene – Snow
Local Jurisdiction	Jefferson County
Previous Rating <sup>1</sup>	N/A – Not in Krazan Report
Previous Buffer Width <sup>2</sup>	N/A – Not in Krazan Report
2008 Rating	I (46 points) <sup>3</sup> Natural Heritage Wetlands
2013 Buffer Width	250 Feet <sup>4</sup>
Size	Approximately (in square feet): W3 – 39,781; W2 – 13,731; W1 – 75,000
Cowardin Class	Palustrine Scrub/shrub
HGM Class	Depressional



Description Summary	
Sample Plot	SP-3 (Conducted in Wetland W3, but is representative of Wetlands W1, W2 and W3)
Vegetation	<b>Shrub:</b> Rose spirea ( <i>Spiraea douglasii</i> ) and Oregon crab apple ( <i>Malus fusca</i> ) <b>Forested:</b> Western red cedar ( <i>Thuja plicata</i> ) – not enough for a vegetation class
Soils	Soils met the hydric soils indicator for hydrogen sulfide (A4).
Hydrology	<b>Indicators:</b> Water at the surface in the soil pit with saturation to the surface. <b>Source:</b> Direct precipitation, surface runoff, high groundwater table.
Notes	The three systems are described together because they were similar systems. They are depressional wetlands with no outlets dominated by a very thick shrub layer of rose spirea. These wetlands are natural heritage wetlands and are automatically considered Category I wetlands (DNR, 2013).

Western Washington Wetland Rating Functions Summary (46 points total – each wetland rated the same)	
Water Quality	<b>16 points:</b> due to vegetation coverage, having organic soils, not having an outlet and no development or sources of pollution within 150 feet upslope of the wetland
Hydrologic	<b>10 points:</b> due to not having an outlet and vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions).
Habitat	<b>20 points:</b> due to having one vegetation class, moderate amount of habitat interspersed with special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.
Buffer Condition	Areas adjacent to the wetland have been clear cut; however, the wetland is immediately surrounded by forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with an understory that consists of California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), and sword fern ( <i>Polystichum munitum</i> ).

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 9. WETLAND J

Wetland J – Information	
Location	North end of the Central Conveyor
WRIA	17 – Quilcene – Snow
Local Jurisdiction	Jefferson County
Previous Rating <sup>1</sup>	III
Previous Buffer Width <sup>2</sup>	50
Rating	III (33 points) <sup>3</sup>
Buffer Width	80 Feet <sup>4</sup>
Size	Approximately 1,000 square feet
Cowardin Class	Palustrine Forested
HGM Class	Depressional

Description Summary	
Sample Plot	SP-4
Vegetation	<p><b>Emergent:</b> Slough sedge (<i>Carex obnupta</i>) and field horsetail (<i>Equisetum arvense</i>)</p> <p><b>Shrub:</b> Rose spirea (<i>Spiraea douglasii</i>) and salmonberry (<i>Rubus spectabilis</i>)</p> <p><b>Forested:</b> Western red cedar (<i>Thuja plicata</i>) and red alder (<i>Alnus rubra</i>)</p>
Soils	Soils met the hydric soils indicator for Redox Dark Surface (F6).
Hydrology	<p><b>Indicators:</b> No hydrology at the time of the field visit but has geomorphic position and passed the FAC-Neutral test.</p> <p><b>Source:</b> direct precipitation, surface runoff, high groundwater table.</p>
Notes	The wetland is situated in the bottom of a topographic depression adjacent to the existing gravel road. Water drains through a culvert under the road to the west. No defined channels were observed west of the road.


Western Washington Wetland Rating Functions Summary (33 points total)	
Water Quality	<b>11 points:</b> due to vegetation coverage, having an outlet and no development or sources of pollution within 150 feet upslope of the wetland
Hydrologic	<b>5 points:</b> due to having an outlet and vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions).
Habitat	<b>17 points:</b> due to having one vegetation class, moderate amount of habitat interspersed with special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.
Buffer Condition	Areas adjacent to the wetland have been clear cut; however, the wetland is surrounded by young forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with an understory that consists of California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), and sword fern ( <i>Polystichum munitum</i> ).

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.




TABLE 10. CENTRAL CONVEYOR WETLAND H

Wetland H – Information		
Location	North end of the Central Conveyor	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	III	
Previous Buffer Width <sup>2</sup>	50	
2008 Rating	III (35 points) <sup>3</sup>	
2013 Buffer Width	80 Feet <sup>4</sup>	
Size	Approximately 3,400 square feet	
Cowardin Class	Palustrine Emergent	
HGM Class	Depressional	
Description Summary		
Sample Plot	SP-5	
Vegetation	<b>Emergent:</b> Slough sedge ( <i>Carex obnupta</i> ) <b>Shrub:</b> Salmonberry ( <i>Rubus spectabilis</i> ) – not enough for a vegetation class	
Soils	Soils met the hydric soils indicator for Redox Dark Surface (F6).	
Hydrology	<b>Indicators:</b> No hydrology at the time of the field visit but algal mat observed <b>Source:</b> direct precipitation, surface runoff, high groundwater table.	
Notes	Slough sedge appeared dead and tansy (an upland species) was starting to invade wetland. However, evidence of wetland hydrology was observed and hydric soil indicators were found at the site. The wetland may be receiving less hydrology after the surrounding area was logged.	
Western Washington Wetland Rating Functions Summary (35 points total)		
Water Quality	<b>12 points:</b> due to vegetation coverage, not having an outlet and no sources of pollution within 150 feet upslope of the wetland (clear cut is considered normal conditions).	
Hydrologic	<b>7 points:</b> due to not having an outlet and vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions).	
Habitat	<b>16 points:</b> due to having one vegetation class, 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	Areas adjacent to the wetland have been clear cut and current dominant vegetation consists of common tansy ( <i>Tanacetum vulgare</i> ) and scattered Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), and young saplings of Douglas fir ( <i>Pseudotsuga menziesii</i> ).	

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

**TABLE 11. WETLAND E (PHEASANT LAKE)**

Wetland E (Pheasant Lake) – Information		
Location	Central part of Central Conveyor	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	I	
Previous Buffer Width <sup>2</sup>	150	
2008 Rating	III (45 points) <sup>3</sup>	
2013 Buffer Width	150 Feet <sup>4</sup>	
Size	Approximately 642,940 square feet	
Cowardin Class	Palustrine Forested scrub/shrub emergent and aquatic bed	
HGM Class	Depressional	
Description Summary		
Sample Plot	SP-6	
Vegetation	<p><b><u>Aquatic Bed:</u></b> Common duckweed (<i>Lemna minor</i>) and yellow pond lily (<i>Nuphar lutea</i>)</p> <p><b><u>Emergent:</u></b> Common rush (<i>Juncus effusus</i>), unidentified aquatic grasses, creeping buttercup (<i>Ranunculus repens</i>)</p> <p><b><u>Shrub:</u></b> Salmonberry (<i>Rubus spectabilis</i>), rose spirea (<i>Spiraea douglasii</i>) and willow species (<i>Salix spp.</i>).</p> <p><b><u>Forested:</u></b> Western red cedar (<i>Thuja plicata</i>), red alder (<i>Alnus rubra</i>) and willow species (<i>Salix spp.</i>)</p>	
Soils	Soils met the hydric soils indicator for Redox Dark Surface (F6).	
Hydrology	<p><b><u>Indicators:</u></b> Standing water within the wetland and water marks on vegetation.</p> <p><b><u>Source:</u></b> direct precipitation, surface runoff, high groundwater table.</p>	
Notes	Depressional system with no apparent outlet but a stream is mapped as associated with the wetland.	
Western Washington Wetland Rating Functions Summary (45 points total)		
Water Quality	<b>6 points:</b> due to vegetation coverage, not having an outlet and no sources of pollution within 150 feet upslope of the wetland (clear cut is considered normal conditions).	
Hydrologic	<b>12 points:</b> due to not having an outlet and vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions).	
Habitat	<b>27 points:</b> 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	Areas adjacent to the wetland have been clear cut; however, the wetland is surrounded by young forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with an understory that consists of California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), and sword fern ( <i>Polystichum munitum</i> ).	


## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 12. WETLAND I

Wetland I – Information	
Location	North end of the Central Conveyor
WRIA	17 – Quilcene – Snow
Local Jurisdiction	Jefferson County
Previous Rating <sup>1</sup>	III
Previous Buffer Width <sup>2</sup>	50
2008 Rating	III (34 points) <sup>3</sup>
2013 Buffer Width	80 Feet <sup>4</sup>
Size	Approximately 9,500 square feet
Cowardin Class	Palustrine Scrub/shrub
HGM Class	Depressional




Description Summary	
Sample Plot	SP-7
Vegetation	<b>Emergent:</b> Slough sedge ( <i>Carex obnupta</i> ), water parsley ( <i>Oenanthe sarmentosa</i> ) and lady fern ( <i>Athyrium filix-femina</i> ) <b>Shrub:</b> Scouler’s willow ( <i>Salix scouleriana</i> )
Soils	Soils met the hydric soils indicator for Redox Dark Surface (F6).
Hydrology	<b>Indicators:</b> No hydrology at the time of the field visit but algal mat observed <b>Source:</b> direct precipitation, surface runoff, high groundwater table.
Notes	Slough sedge appeared dead and tansy (an upland species) was starting to invade wetland. However, evidence of wetland hydrology was observed and hydric soil indicators were found at the site. The wetland may be receiving less hydrology after the surrounding area was logged.

Western Washington Wetland Rating Functions Summary (34 points total)	
Water Quality	<b>10 points:</b> due to vegetation coverage, not having an outlet and no sources of pollution within 150 feet upslope of the wetland (clear cut is considered normal conditions).
Hydrologic	<b>7 points:</b> due to not having an outlet and vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions).
Habitat	<b>17 points:</b> due to having one vegetation class, 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	Areas adjacent to the wetland have been clear cut and current dominant vegetation consists of common tansy ( <i>Tanacetum vulgare</i> ) and scattered Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), and young saplings of Douglas fir ( <i>Pseudotsuga menziesii</i> ).

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.


TABLE 13. WETLAND C

Wetland C – Information		
Location	Central part of Central Conveyor	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	I	
Previous Buffer Width <sup>2</sup>	150	
Rating	II (63 points) <sup>3</sup>	
Buffer Width	300 Feet <sup>4</sup>	
Size	Approximately 858,000 square feet	
Cowardin Class	Palustrine Forested scrub/shrub emergent and aquatic bed	
HGM Class	Depressional	
Description Summary		
Sample Plot	SP-9	
Vegetation	<p><b><u>Aquatic Bed:</u></b> Common duckweed (<i>Lemna minor</i>) and floating pondweed (<i>Potamogeton natans</i>)</p> <p><b><u>Emergent:</u></b> Common rush (<i>Juncus effusus</i>), unidentified aquatic grasses, creeping buttercup (<i>Ranunculus repens</i>)</p> <p><b><u>Shrub:</u></b> Salmonberry (<i>Rubus spectabilis</i>), rose spirea (<i>Spiraea douglasii</i>) and Scouler's willow (<i>Salix scouleriana</i>).</p> <p><b><u>Forested:</u></b> Western red cedar (<i>Thuja plicata</i>), red alder (<i>Alnus rubra</i>) and willow species (<i>Salix spp.</i>)</p>	
Soils	Soils met the hydric soils indicator for Hydrogen Sulfide (A4).	
Hydrology	<p><b><u>Indicators:</u></b> Water was at 2 inches in the soil pit and saturation was to the surface</p> <p><b><u>Source:</u></b> Direct precipitation, surface runoff, high groundwater table.</p>	
Notes	Depressional system with water discharging north into a stream.	
Western Washington Wetland Rating Functions Summary (63 points total)		
Water Quality	<b>9 points:</b> due to vegetation coverage, having an outlet and no sources of pollution within 150 feet upslope of the wetland.	
Hydrologic	<b>24 points:</b> due to having an outlet and vegetation coverage; and draining to a stream that has flooding problems (opportunity for hydrologic functions).	
Habitat	<b>30 points:</b> 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 wetland is surrounded by forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) and red alder ( <i>Alnus rubra</i> ) with an understory that consists of California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), salal ( <i>Gaultheria shallon</i> ) and sword fern ( <i>Polystichum munitum</i> ).	

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 14. WETLAND M

Wetland M – Information		
Location	Southern part of Central Conveyor	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	III	
Previous Buffer Width <sup>2</sup>	50	
2008 Rating	III (37 points) <sup>3</sup>	
2013 Buffer Width	80 Feet <sup>4</sup>	
Size	Approximately 13,680 square feet	
Cowardin Class	Palustrine Forested	
HGM Class	Depressional	
Description Summary		
Sample Plot	SP-10	
Vegetation	<b><u>Emergent:</u></b> Slough sedge ( <i>Carex obnupta</i> ) <b><u>Shrub:</u></b> None <b><u>Forested:</u></b> Red alder ( <i>Alnus rubra</i> )	
Soils	Soils met the hydric soils indicator for Redox Dark Surface (F6).	
Hydrology	<b><u>Indicators:</u></b> No hydrology at the time of the field visit but water stained leaves were observed and it has geomorphic position and passed the FAC-Neutral test. <b><u>Source:</u></b> Direct precipitation, surface runoff, high groundwater table.	
Notes	Depressional wetland system with no outlet identified.	
Western Washington Wetland Rating Functions Summary (37 points total)		
Water Quality	<b><u>12 points:</u></b> due to vegetation coverage, not having an outlet and no sources of pollution within 150 feet upslope of the wetland.	
Hydrologic	<b><u>7 points:</u></b> due to not having an outlet and vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions).	
Habitat	<b><u>18 points:</u></b> due to having one vegetation class, low 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 wetland is surrounded by forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) and red alder ( <i>Alnus rubra</i> ) with an understory that consists of California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), salal ( <i>Gaultheria shallon</i> ) and sword fern ( <i>Polystichum munitum</i> ).	


## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazen report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 15. WETLAND K

Wetland K – Information	
Location	Southern part of Central Conveyor
WRIA	17 – Quilcene – Snow
Local Jurisdiction	Jefferson County
Previous Rating <sup>1</sup>	II
Previous Buffer Width <sup>2</sup>	100
2008 Rating	III (37 points) <sup>3</sup>
2013 Buffer Width	80 Feet <sup>4</sup>
Size	Approximately 80,150 square feet
Cowardin Class	Palustrine Forested
HGM Class	Depressional



Description Summary	
Sample Plot	SP-8
Vegetation	<b>Emergent:</b> Slough sedge ( <i>Carex obnupta</i> ) <b>Shrub:</b> Salmonberry ( <i>Rubus spectabilis</i> ) <b>Forested:</b> Red alder ( <i>Alnus rubra</i> )
Soils	Soils did not meet hydric soil indicators but evidence of wetland hydrology was present and there was a dominance of hydrophytic vegetation. Therefore, hydric soils are assumed to be present.
Hydrology	<b>Indicators:</b> No hydrology at the time of the field visit but water stained leaves and algal mats were observed and it has geomorphic position and passed the FAC-Neutral test. <b>Source:</b> Direct precipitation, surface runoff, high groundwater table.
Notes	Northern area of wetland is within 300 feet of central conveyor and the northern boundary appeared to correspond with the previous delineation. The southern area of wetland (south of an access road) did not appear to be consistent with the previous delineation. However, this area was more than 300 feet from the central conveyor and will not affect the proposed project. This southern area was NOT re-delineated.


Western Washington Wetland Rating Functions Summary (37 points total)	
Water Quality	<b>12 points:</b> due to vegetation coverage, not having an outlet and no sources of pollution within 150 feet upslope of the wetland.
Hydrologic	<b>7 points:</b> due to not having an outlet and vegetation coverage; and there are no adjacent resources that could be damaged from flooding (opportunity for hydrologic functions).
Habitat	<b>18 points:</b> due to having one vegetation class, low amount of habitat interspersed with special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.
Buffer Condition	The wetland is surrounded by forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) and red alder ( <i>Alnus rubra</i> ) with an understory that consists of California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), salal ( <i>Gaultheria shallon</i> ) and sword fern ( <i>Polystichum munitum</i> ).

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 16. WETLAND A

Wetland A – Information		
Location	Southern area of the central conveyor in the bottom of a ravine	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	II	
Previous Buffer Width <sup>2</sup>	100	
2008 Rating	III (37 points) <sup>3</sup>	
2013 Buffer Width	80 Feet <sup>4</sup>	
Size	Approximately 40,140 square feet	
Cowardin Class	Palustrine Forested	
HGM Class	Sloping	Stream discharging from ravine; Wetland A is above stream.



Description Summary	
Sample Plot	Sample Plot was not conducted because could not be accessed due to steep terrain.
Vegetation	<b>Herbaceous:</b> Lady fern ( <i>Athyrium filix-femina</i> ) and field horsetail ( <i>Equisetum arvense</i> ) observed from the bottom of the ravine. <b>Shrub:</b> Salmonberry ( <i>Rubus spectabilis</i> ) – observed from the bottom of the ravine. <b>Forested:</b> Red alder ( <i>Alnus rubra</i> ) – observed from the bottom of the ravine.
Soils	Sample plot not conducted
Hydrology	<b>Indicators:</b> Water was observed discharging from the ravine into Wetland B. <b>Source:</b> Direct precipitation, surface runoff, high groundwater table.
Notes	The wetland is confined to the bottom of a ravine and boundaries are not likely to have changed. GeoEngineers observed at the bottom of the ravine, a stream that discharges from the ravine and the red alder forested canopy associated with the wetland. Therefore it is assumed that the wetland boundary for this wetland did not change.


Western Washington Wetland Rating Functions Summary (37 points total)	
Water Quality	<b>10 points:</b> due to vegetation coverage, having a steep slope and having residential areas within 150 feet upslope (i.e. pollution source)
Hydrologic	<b>8 points:</b> due to having an un-constricted outlet and vegetation coverage; and not having an opportunity for hydrologic functions because it flows directly into Hood Canal.
Habitat	<b>19 points:</b> due to having one vegetation class, 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	The wetland is immediately surrounded by young forested habitat that is dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with lesser amounts of 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 California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), red elderberry ( <i>Sambucus racemosa</i> ), bracken fern ( <i>Pteridium aquilinum</i> ) and sword fern ( <i>Polystichum munitum</i> ).

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 17. WETLAND B

Wetland B – Information	
Location	Southern part of Central Conveyor
WRIA	17 – Quilcene – Snow
Local Jurisdiction	Jefferson County
Previous Rating <sup>1</sup>	II
Previous Buffer Width <sup>2</sup>	100
2008 Rating	II <sup>3</sup> Estuarine Wetland
2013 Buffer Width	150 Feet <sup>4</sup>
Size	Not determined, wetland extends off site to the NE and SW
Cowardin Class	Palustrine Forested and Emergent
HGM Class	Depressional and Estuarine



Description Summary	
Sample Plot	SP-11
Vegetation	<p><b><u>Emergent:</u></b> American dunegrass (<i>Leymus mollis</i>), common rush (<i>Juncus effusus</i>), lady fern (<i>Athyrium filix-femina</i>) and field horsetail (<i>Equisetum arvense</i>)</p> <p><b><u>Shrub:</u></b> Salmonberry (<i>Rubus spectabilis</i>) and Scouler's willow (<i>Salix scouleriana</i>)</p> <p><b><u>Forested:</u></b> Red alder (<i>Alnus rubra</i>) and Pacific willow (<i>Salix lasiandra</i>).</p>
Soils	Soils did not meet hydric soil indicators because it was sand but evidence of wetland hydrology was present and there was a dominance of hydrophytic vegetation. Therefore, hydric soils are assumed to be present.
Hydrology	<p><b><u>Indicators:</u></b> No hydrology at the time of the field visit but the wetland is situated in a depression that regularly inundated by tidal waters. Water is trapped in depression during high tide events. Saturated to the surface with water to the surface in the north part of the wetland where the stream from Wetland A discharges into the wetland.</p> <p><b><u>Source:</u></b> Direct precipitation, surface runoff, stream from Wetland A, and tidal waters.</p>
Notes	Narrow estuarine wetland along the shoreline of Hood Canal


Western Washington Wetland Rating Functions Summary	
Water Quality	<b><u>Potential to perform this function:</u></b> due to vegetation coverage, steep slope and residential areas within 150 feet upslope (i.e. pollution source)
Hydrologic	<b><u>Potential to perform this function:</u></b> due to having an un-constricted outlet and vegetation coverage; and not having an opportunity for hydrologic functions because it flows directly into Hood Canal.
Habitat	<b><u>Potential to perform this function:</u></b> due to having two vegetation classes, moderate amount of habitat interspersed with special habitat features. The system has relatively large buffers and undisturbed connections to other upland and wetland areas.
Buffer Condition	Wetland is surrounded by forest dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with lesser amounts of 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 California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), red elderberry ( <i>Sambucus racemosa</i> ), bracken fern ( <i>Pteridium aquilinum</i> ) and sword fern ( <i>Polystichum munitum</i> ).

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.



TABLE 18. WETLAND R

Wetland R – Information		
Location	More than 300 feet south of the Central Conveyor, along the shoreline	
WRIA	17 – Quilcene – Snow	
Local Jurisdiction	Jefferson County	
Previous Rating <sup>1</sup>	N/A – not previously identified	
Previous Buffer Width <sup>2</sup>	N/A – not previously identified	
2008 Rating	II <sup>3</sup> Estuarine Wetland	
2013 Buffer Width	150 Feet <sup>4</sup>	
Size	Not determined, wetland extends off site	
Cowardin Class	Palustrine Forested and Emergent	
HGM Class	Depressional and Estuarine	
Description Summary		
Sample Plot	No Sample Plots were conducted because more than 300 feet from project area.	
Vegetation	<b><u>Emergent:</u></b> American dunegrass ( <i>Leymus mollis</i> ), common rush ( <i>Juncus effusus</i> ), lady fern ( <i>Athyrium filix-femina</i> ) and field horsetail ( <i>Equisetum arvense</i> ) <b><u>Shrub:</u></b> Salmonberry ( <i>Rubus spectabilis</i> ) and Scouler’s willow ( <i>Salix scouleriana</i> ) <b><u>Forested:</u></b> Red alder ( <i>Alnus rubra</i> ) and Pacific willow ( <i>Salix lasiandra</i> ).	
Soils	Although an official sample plot was not conducted a sulfidic odor was observed. Therefore the soils meet the A4 Hydric soil indicator.	
Hydrology	<b><u>Indicators:</u></b> Some portions of the wetland were ponded at time of the site and other portions were saturated to the surface. The wetland is situated in a depression that regularly inundated by tidal waters. Water is trapped in depression during high tide events. <b><u>Source:</u></b> Direct precipitation, surface runoff, seeps discharging from the cliffs, and tidal waters.	
Notes	Narrow estuarine wetland along the shoreline of Hood Canal	
Western Washington Wetland Rating Functions Summary		
Water Quality	<b><u>Potential to perform this function:</u></b> due to vegetation coverage, steep slope and residential areas within 150 feet upslope (i.e. pollution source)	
Hydrologic	<b><u>Potential to perform this function:</u></b> due to having an un-constricted outlet and vegetation coverage; and not having an opportunity for hydrologic functions because it flows directly into Hood Canal.	
Habitat	<b><u>Potential to perform this function:</u></b> due to having two 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	Wetland is surrounded by forest dominated by Douglas fir ( <i>Pseudotsuga menziesii</i> ) with lesser amounts of 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 California huckleberry ( <i>Vaccinium ovatum</i> ), Pacific rhododendron ( <i>Rhododendron macrophyllum</i> ), red elderberry ( <i>Sambucus racemosa</i> ), bracken fern ( <i>Pteridium aquilinum</i> ) and sword fern ( <i>Polystichum munitum</i> ).	

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krazan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

**TABLE 19. WETLAND SUMMARY OF TASKS CATEGORY AND BUFFER WIDTH**

Wetland Name	Approximate Location	GeoEngineers Tasks	Category		Required Buffer Width (feet)	
			Previous <sup>1</sup>	Current (2008) <sup>3</sup>	Previous <sup>2</sup>	2013 <sup>4</sup>
Meridian Extraction Area						
Wetland O	Southwest Corner	Delineate east edge and categorize	N/A	III	N/A	150
Wetland P	Southwest Corner	Delineate wetland and categorize	N/A	IV	N/A	50
Wetland Q (Lost Lake)	Eastern area	Categorize wetland	N/A	II	N/A	150
W3	Eastern area	Verify wetland boundaries and categorize	N/A	I	N/A	250
W2	Eastern area	Categorize wetland	N/A	I	N/A	250
W1	Eastern area	Categorize wetland	N/A	I	N/A	250
Wetland H	North edge	Categorize wetland	N/A	III	N/A	150
Central Conveyor (from north to south along the corridor)						
Wetland J	North end of conveyor	Verify wetland boundaries	III	III	50	80
Wetland H	North end of conveyor	Verify wetland boundaries	III	III	50	80
Wetland E (Pheasant Lake)	Central part of conveyor	Verify wetland boundaries	I	III	150	150
Wetland I	Central part of conveyor	Verify wetland boundaries	III	III	50	80
Wetland C	Central part of conveyor	Verify wetland boundaries	I	II	150	300
Wetland M	South end of conveyor	Verify wetland boundaries	III	III	50	80
Wetland K	South end of conveyor	Verify wetland boundaries	II	III	100	80
Wetland A	Along shoreline	Verify wetland boundaries	II	III	100	80



Wetland Name	Approximate Location	GeoEngineers Tasks	Category		Required Buffer Width (feet)	
			Previous	Current (2008)	Previous	2013
Wetland B	Along shoreline	Verify wetland boundaries	II	II	100	150
Wetland R	Along shoreline, south of conveyor	Categorize wetland	N/A	II	N/A	150

## Notes:

<sup>1</sup> Wetland rating from the 2003 Krahan report.<sup>2</sup> Jefferson County Code (JCC) 18.15.340 – Protection Standards.<sup>3</sup> Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2008).<sup>4</sup> Jefferson County Code (JCC) 18.22.330 – Protection Standards. The final buffer width is subject to approval by the jurisdictional authority.

## SUMMARY

GeoEngineers performed wetland verification services within the Thorndyke Resource property for the proposed project. A total of 17 wetlands were verified and/or re-categorized during the field investigation. Table 19 provides a summary of the critical areas that were reviewed with the categories and associated buffers.

This project will be subject to review through an Environmental Impact Statement (EIS). Part of the process requires the analysis of potential project impacts and mitigation, as necessary. Any subsequent project approvals will need to include any required mitigation of identified impacts. 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 Verification Report 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 Jefferson County and Thorndyke Resource, 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.

## REFERENCES

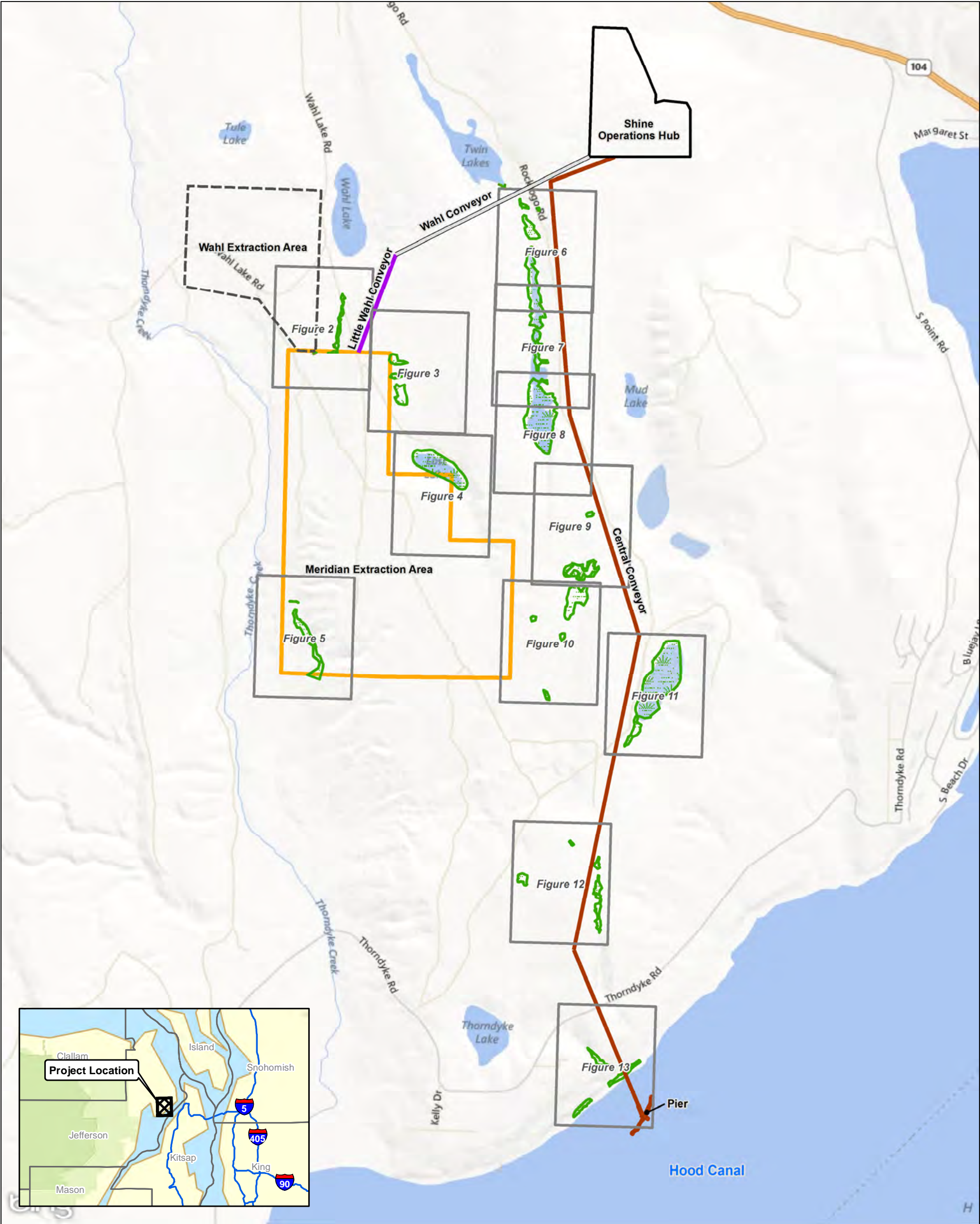
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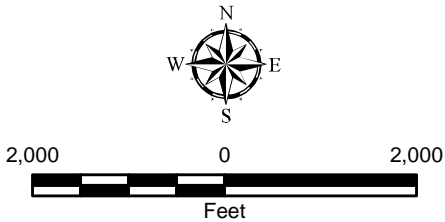
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- |  |                      |  |                                   |
|--|----------------------|--|-----------------------------------|
|  | Detailed Map Page    |  | Meridian Extraction Area Boundary |
|  | Little Wahl Conveyor |  | Wetland Areas Identified          |
|  | Central Conveyor     |  | Shine Operations Hub              |
|  |                      |  | Wahl Extraction Area              |



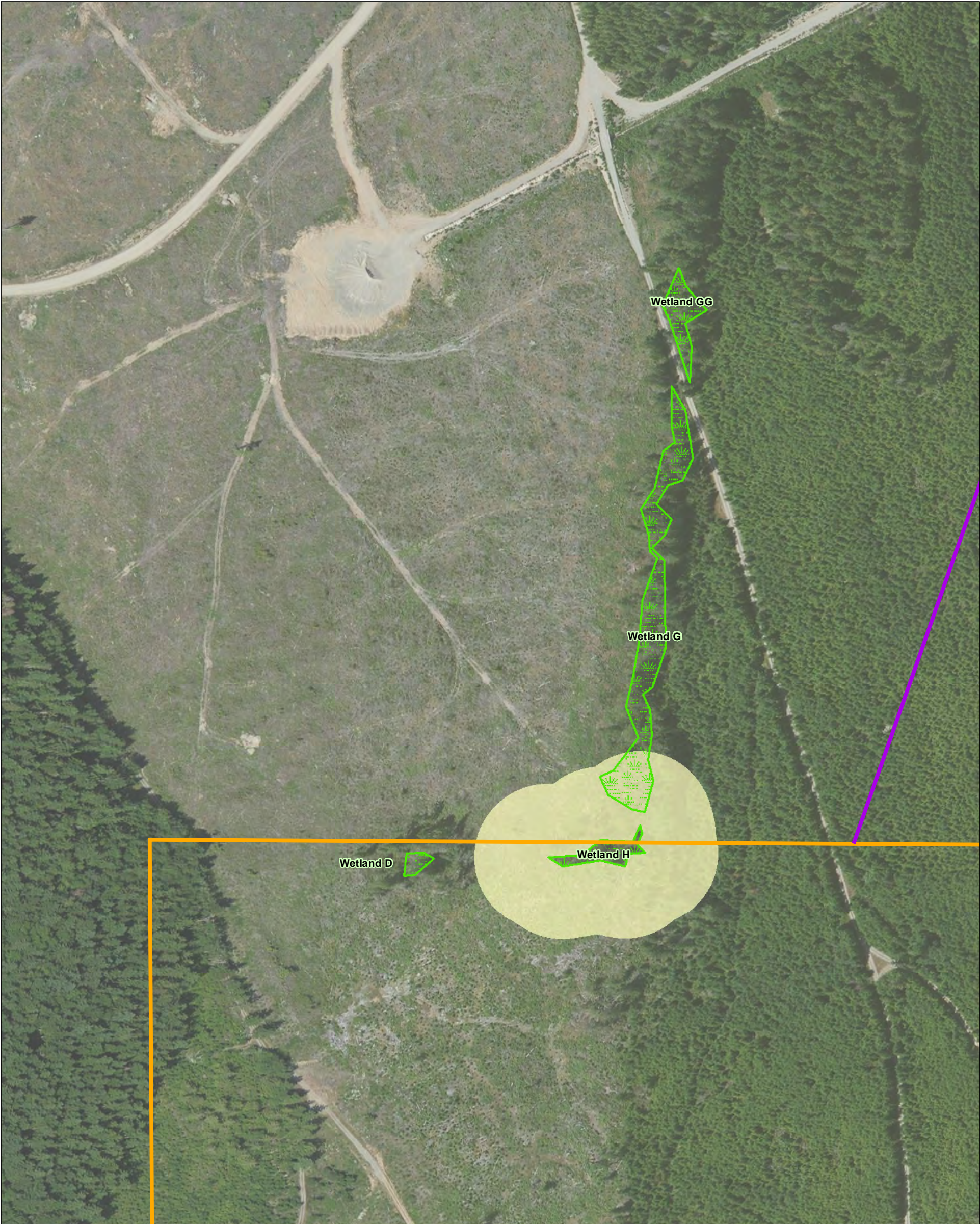
Data Source: Base map from ESRI Data Online

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

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. cannot 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.

Vicinity Map	
Thorndyke Resource Jefferson County, Washington	
	Figure 1



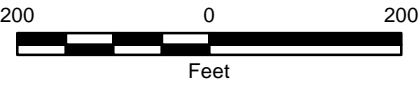


Sample Point	Wetland Area Verified by GeoEngineers	Delineated Wetland Boundary
Little Wahl Conveyor	Wetland Area Verified by other Consultant	Estimated Wetland Boundary
Central Conveyor	Wetland Buffer	Estimated Ordinary High Water Mark
Meridian Extraction Area Boundary		

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

Notes:  
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<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 2</b>



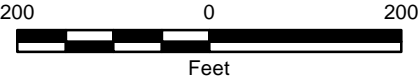


	Sample Point		Wetland Area Verified by GeoEngineers		Delineated Wetland Boundary
	Little Wahl Conveyor		Wetland Area Verified by other Consultant		Estimated Wetland Boundary
	Central Conveyor		Wetland Buffer		Estimated Ordinary High Water Mark
	Meridian Extraction Area Boundary				

Data Source: Aerial image from ESRI Data Online.

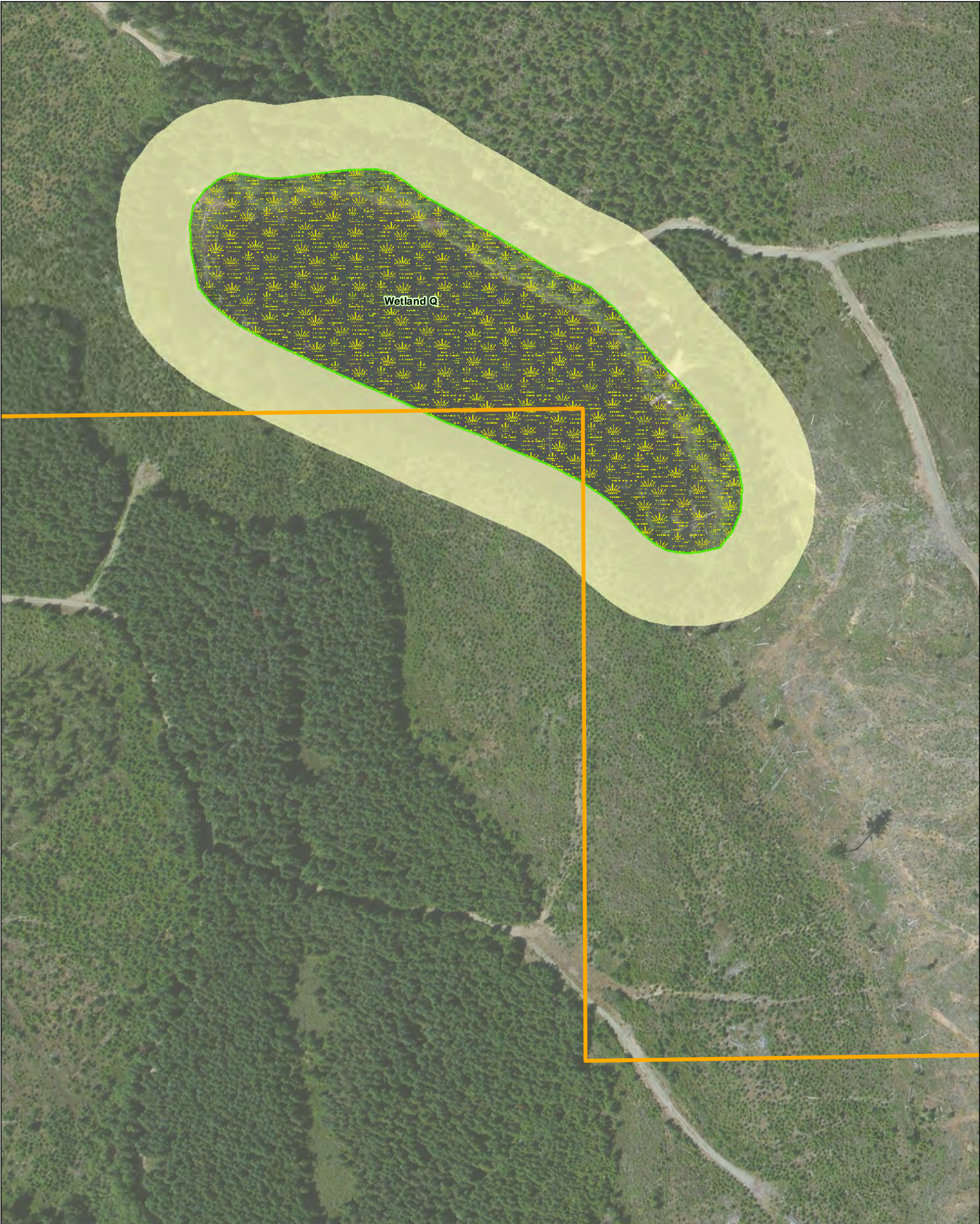
Projection: NAD 1983 UTM Zone 10N

Notes:  
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<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 3</b>



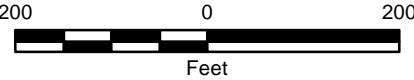


 Sample Point	 Wetland Area Verified by GeoEngineers	 Delineated Wetland Boundary
 Little Wahl Conveyor	 Wetland Area Verified by other Consultant	 Estimated Wetland Boundary
 Central Conveyor	 Wetland Buffer	 Estimated Ordinary High Water Mark
 Meridian Extraction Area Boundary		

Data Source: Aerial image from ESRI Data Online.

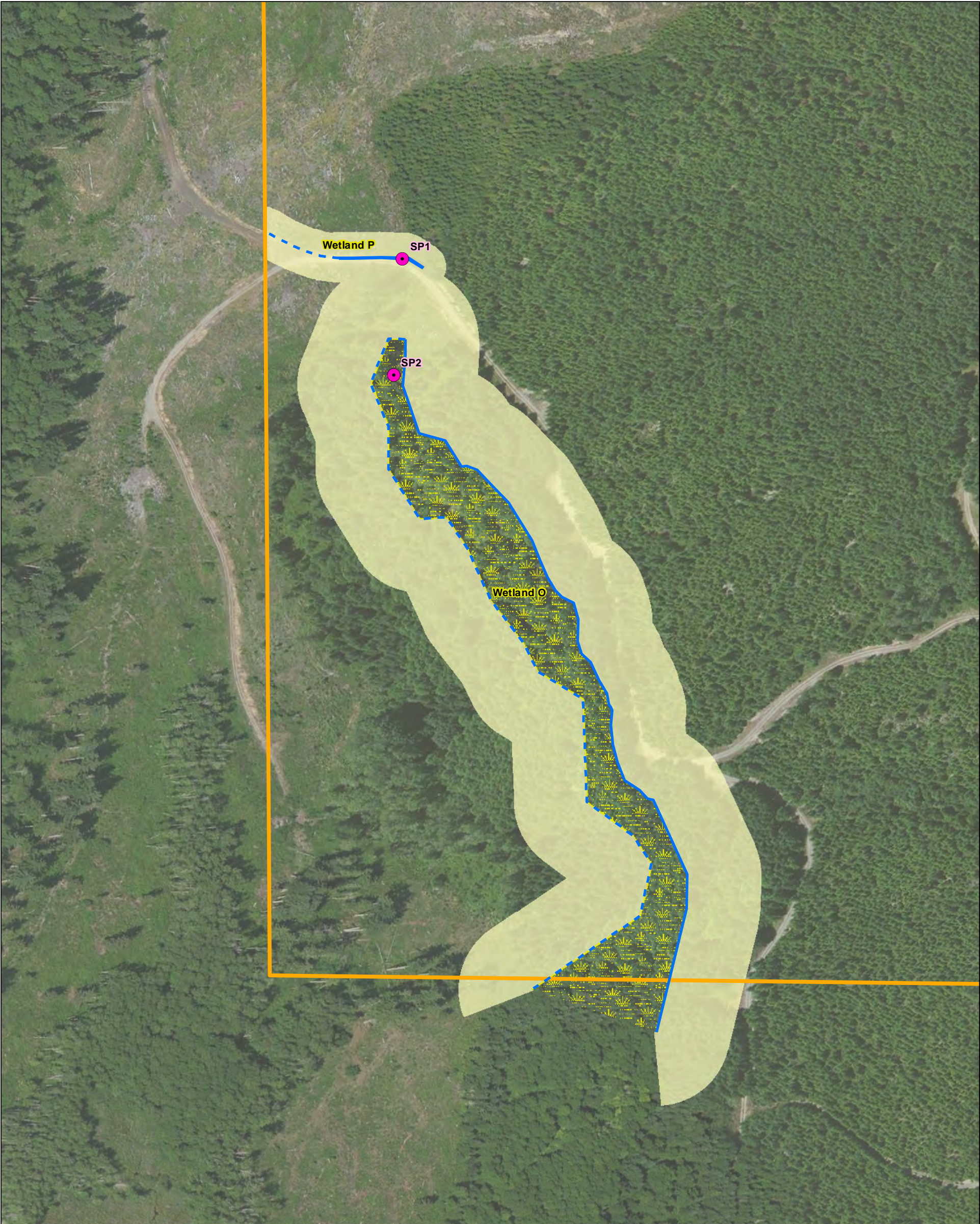
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




Notes:  
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<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 4</b>



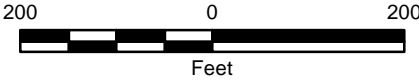


 Sample Point	 Wetland Area Verified by GeoEngineers	 Delineated Wetland Boundary
 Little Wahl Conveyor	 Wetland Area Verified by other Consultant	 Estimated Wetland Boundary
 Central Conveyor	 Wetland Buffer	 Estimated Ordinary High Water Mark
 Meridian Extraction Area Boundary		

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

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. cannot 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.



<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 5</b>



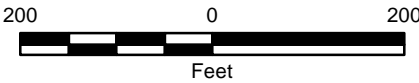


 Sample Point	 Wetland Area Verified by GeoEngineers	 Delineated Wetland Boundary
 Little Wahl Conveyor	 Wetland Area Verified by other Consultant	 Estimated Wetland Boundary
 Central Conveyor	 Wetland Buffer	 Estimated Ordinary High Water Mark
 Meridian Extraction Area Boundary		

Data Source: Aerial image from ESRI Data Online.

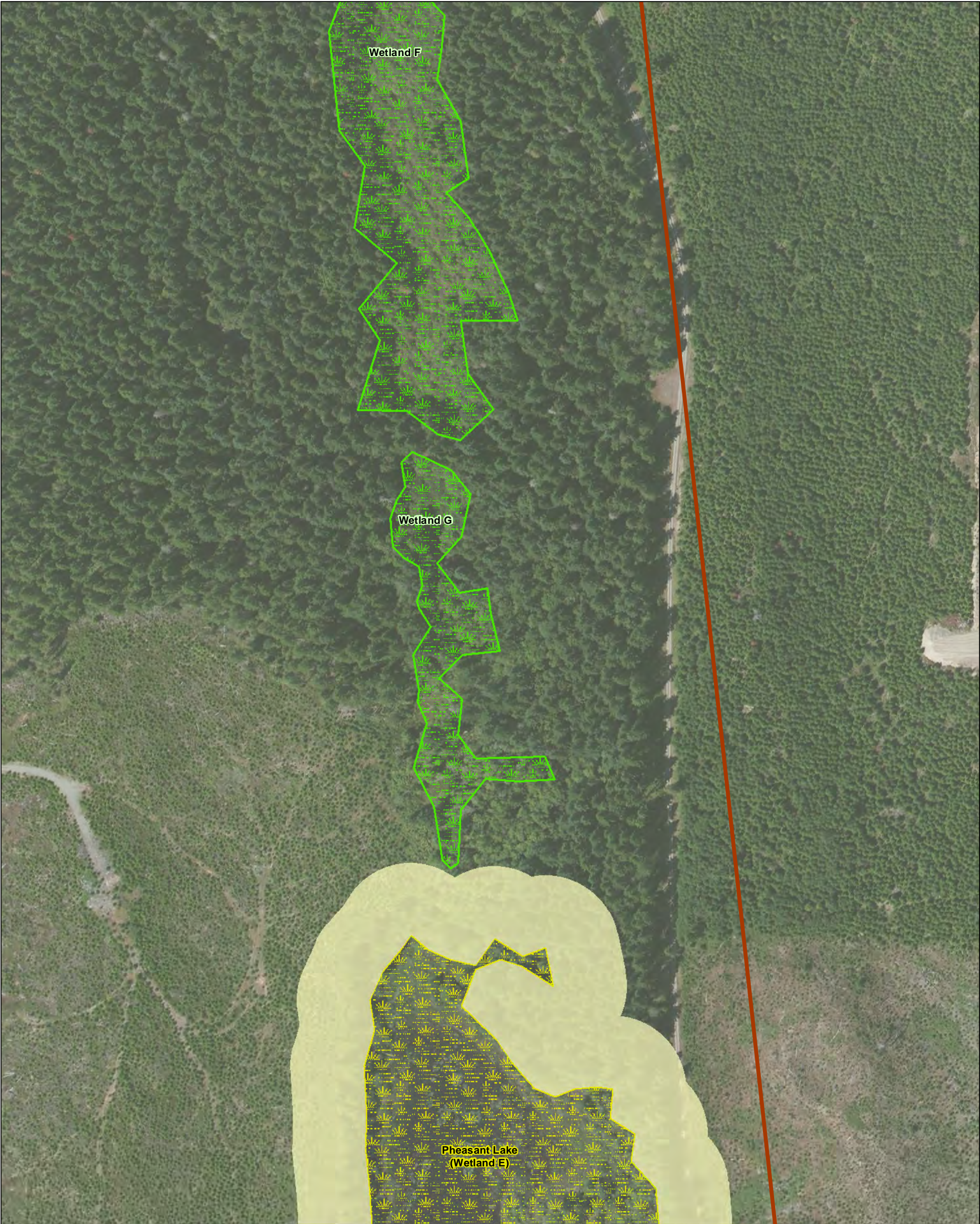
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
Notes:  
1. The locations of all features shown are approximate.  
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<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 6</b>



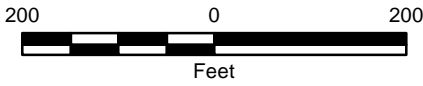


- |   |                                   |   |   |   |                                    |
|---|-----------------------------------|---|---|---|------------------------------------|
|  | Sample Point                      |  | Wetland Area Verified by GeoEngineers     |  | Delineated Wetland Boundary        |
|  | Little Wahl Conveyor              |  | Wetland Area Verified by other Consultant |  | Estimated Wetland Boundary         |
|  | Central Conveyor                  |  | Wetland Buffer                            |  | Estimated Ordinary High Water Mark |
|  | Meridian Extraction Area Boundary |   |   |   |                                    |

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

Notes:  
1. The locations of all features shown are approximate.  
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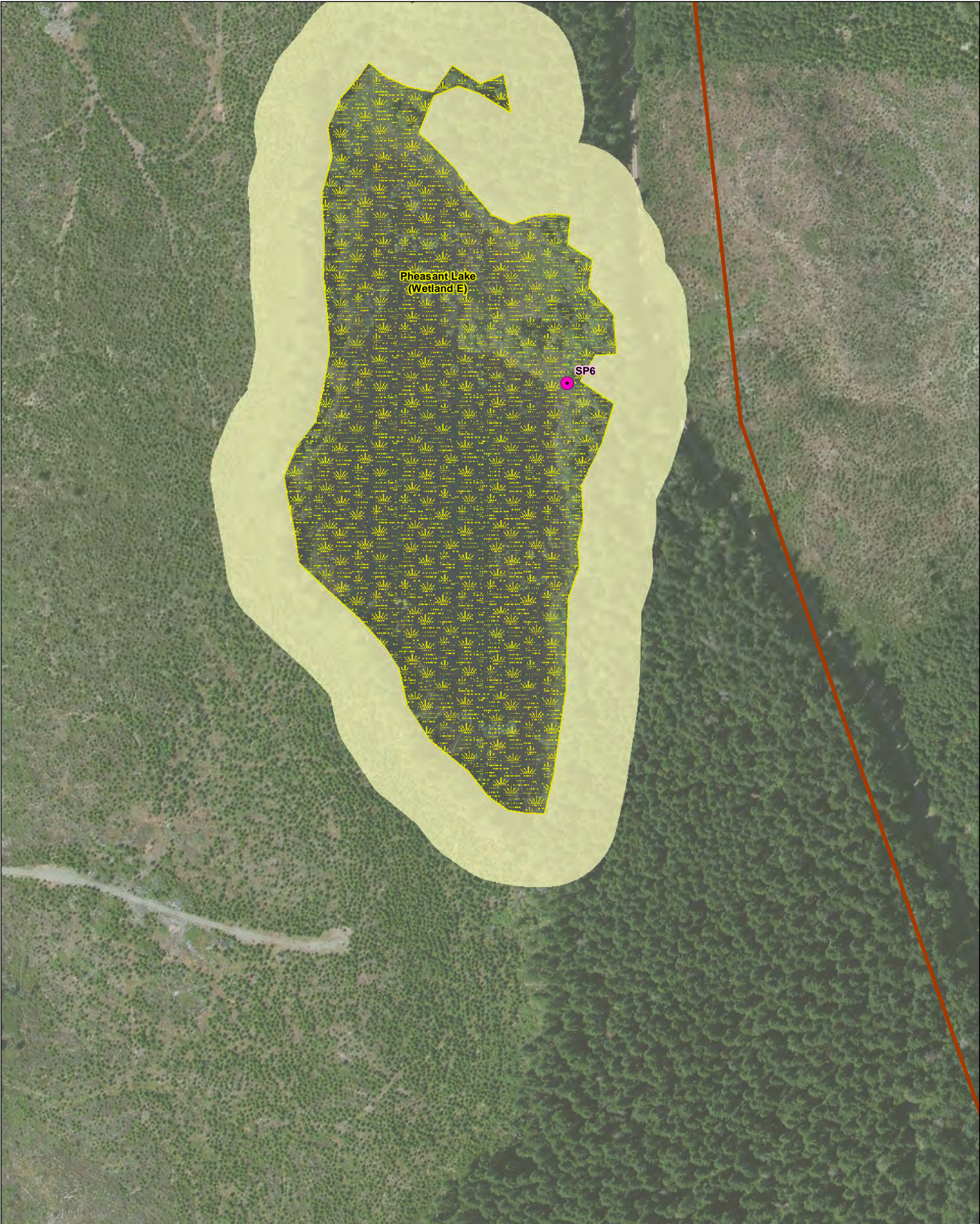
Wetland Detail Map

Thorndyke Resource  
Jefferson County, Washington



Figure 7



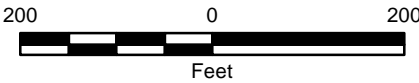


 Sample Point	 Wetland Area Verified by GeoEngineers	 Delineated Wetland Boundary
 Little Wahl Conveyor	 Wetland Area Verified by other Consultant	 Estimated Wetland Boundary
 Central Conveyor	 Wetland Buffer	 Estimated Ordinary High Water Mark
 Meridian Extraction Area Boundary		

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

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. cannot 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.



Wetland Detail Map	
Thorndyke Resource Jefferson County, Washington	
	Figure 8



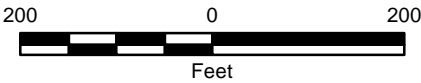


	Sample Point		Wetland Area Verified by GeoEngineers		Delineated Wetland Boundary
	Little Wahl Conveyor		Wetland Area Verified by other Consultant		Estimated Wetland Boundary
	Central Conveyor		Wetland Buffer		Estimated Ordinary High Water Mark
	Meridian Extraction Area Boundary				

Data Source: Aerial image from ESRI Data Online.

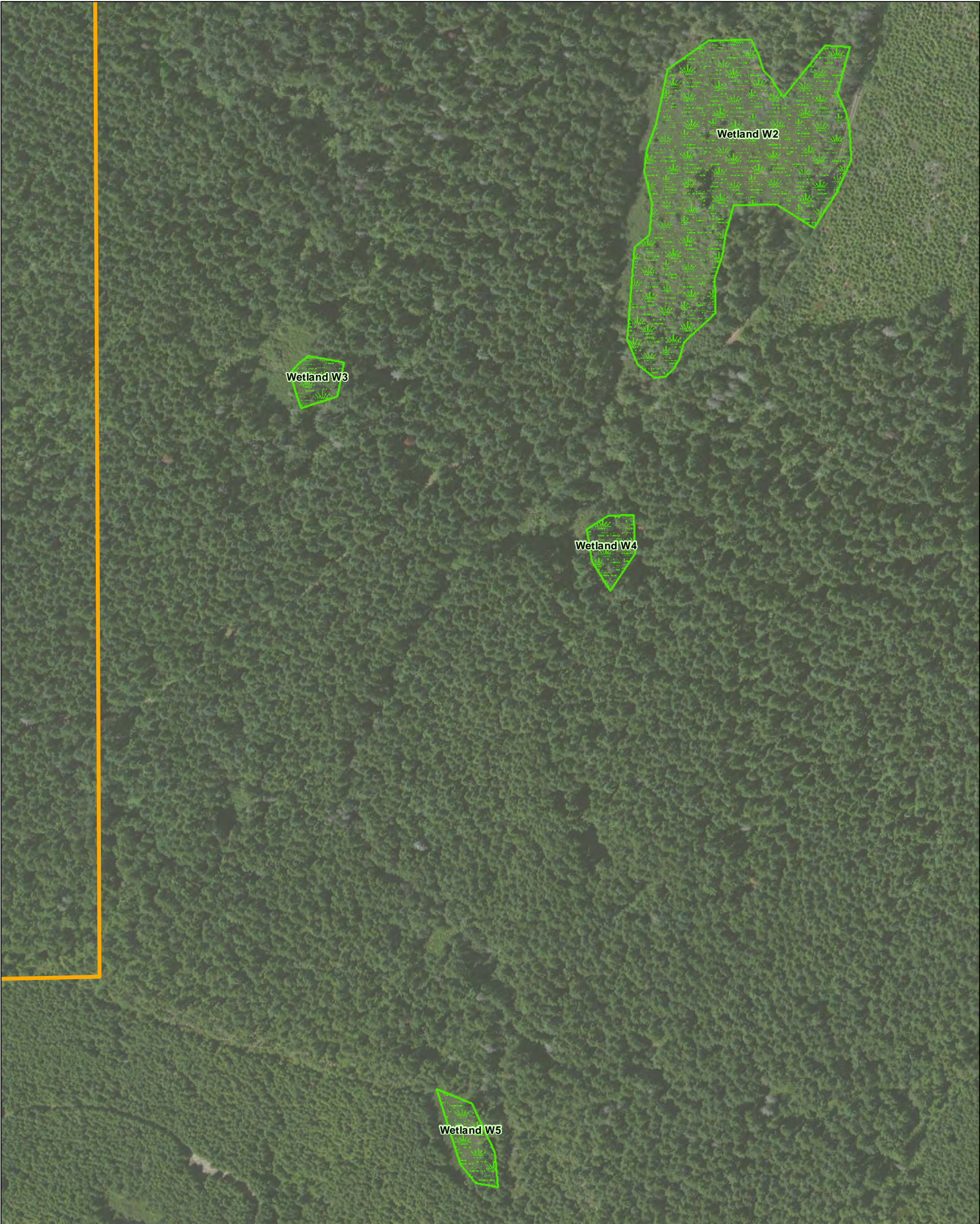
Projection: NAD 1983 UTM Zone 10N

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. cannot 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.



<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 9</b>



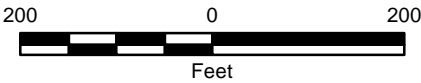


	Sample Point		Wetland Area Verified by GeoEngineers		Delineated Wetland Boundary
	Little Wahl Conveyor		Wetland Area Verified by other Consultant		Estimated Wetland Boundary
	Central Conveyor		Wetland Buffer		Estimated Ordinary High Water Mark
	Meridian Extraction Area Boundary				

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

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. cannot 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.



<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 10</b>





Sample Point

Little Wahl Conveyor

Central Conveyor

Meridian Extraction Area Boundary

Wetland Area Verified by GeoEngineers

Wetland Area Verified by other Consultant

Wetland Buffer

Delineated Wetland Boundary

Estimated Wetland Boundary

Estimated Ordinary High Water Mark

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

Notes:  
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Wetland Detail Map

Thorndyke Resource  
Jefferson County, Washington

GEOENGINEERS

Figure 11



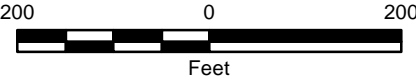


- |                                   |   |                                    |
|-----------------------------------|---|------------------------------------|
| ● Sample Point                    | Wetland Area Verified by GeoEngineers     | Delineated Wetland Boundary        |
| — Little Wahl Conveyor            | Wetland Area Verified by other Consultant | Estimated Wetland Boundary         |
| — Central Conveyor                | Wetland Buffer                            | Estimated Ordinary High Water Mark |
| Meridian Extraction Area Boundary |   |                                    |

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

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. cannot 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.



Wetland Detail Map

Thorndyke Resource  
Jefferson County, Washington



Figure 12



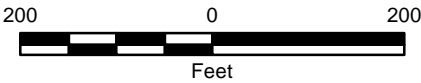


	Sample Point		Wetland Area Verified by GeoEngineers		Delineated Wetland Boundary
	Little Wahl Conveyor		Wetland Area Verified by other Consultant		Estimated Wetland Boundary
	Central Conveyor		Wetland Buffer		Estimated Ordinary High Water Mark
	Meridian Extraction Area Boundary				

Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 UTM Zone 10N

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. cannot 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.

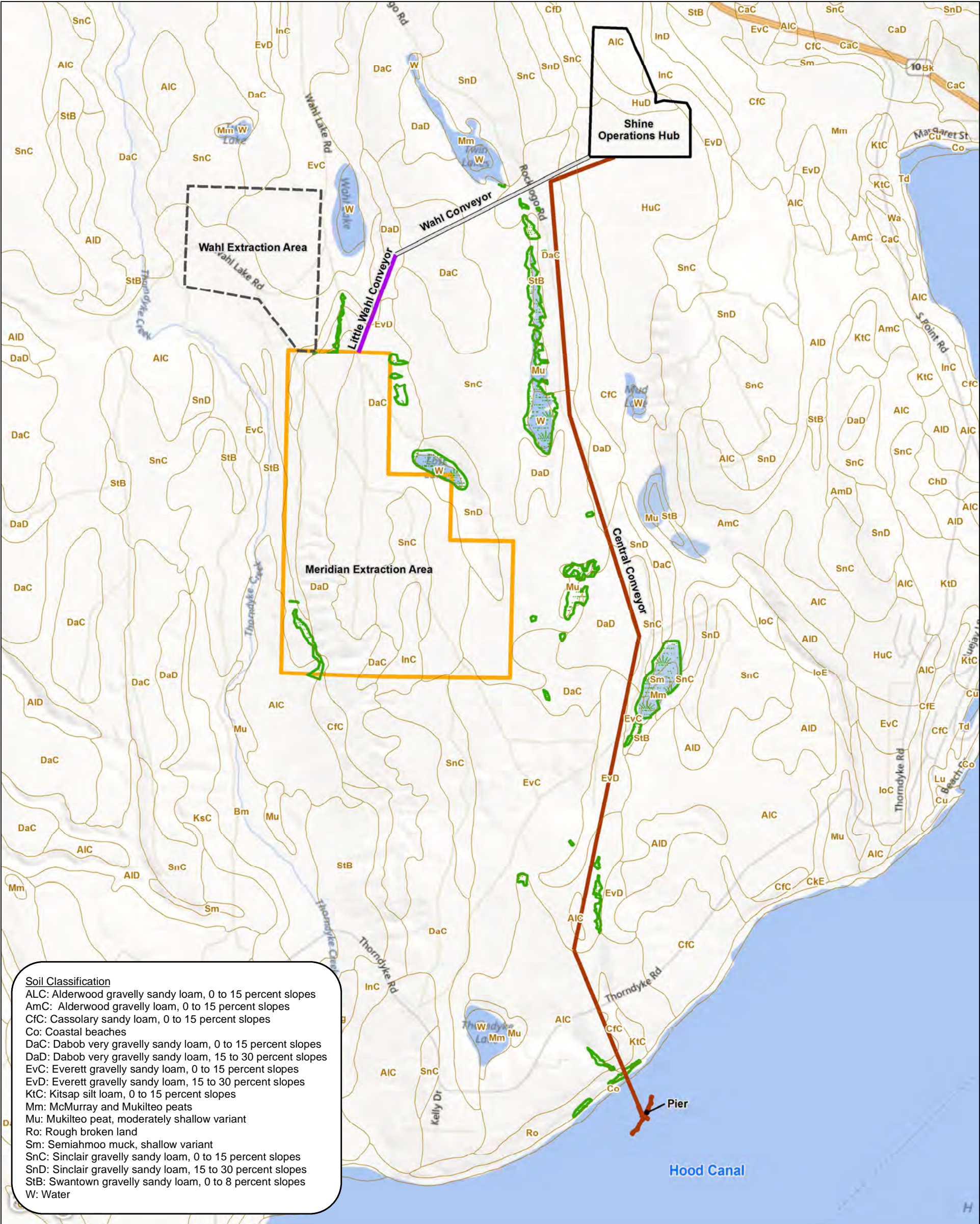


<b>Wetland Detail Map</b>	
Thorndyke Resource Jefferson County, Washington	
	<b>Figure 13</b>









**Soil Classification**  
ALC: Alderwood gravelly sandy loam, 0 to 15 percent slopes  
AmC: Alderwood gravelly loam, 0 to 15 percent slopes  
Cfc: Cassolary sandy loam, 0 to 15 percent slopes  
Co: Coastal beaches  
DaC: Dabob very gravelly sandy loam, 0 to 15 percent slopes  
DaD: Dabob very gravelly sandy loam, 15 to 30 percent slopes  
EvC: Everett gravelly sandy loam, 0 to 15 percent slopes  
EvD: Everett gravelly sandy loam, 15 to 30 percent slopes  
KtC: Kitsap silt loam, 0 to 15 percent slopes  
Mm: McMurray and Mukilteo peats  
Mu: Mukilteo peat, moderately shallow variant  
Ro: Rough broken land  
Sm: Semiahmoo muck, shallow variant  
SnC: Sinclair gravelly sandy loam, 0 to 15 percent slopes  
SnD: Sinclair gravelly sandy loam, 15 to 30 percent slopes  
StB: Swantown gravelly sandy loam, 0 to 8 percent slopes  
W: Water

- Wahl Conveyor

Little Wahl Conveyor

Central Conveyor

Meridian Extraction Area Boundary
- Shine Operations Hub

Wetland Areas Identified

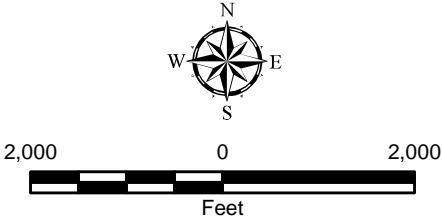
Soils Boundary

Wahl Extraction Area

Data Source: Base map from ESRI Data Online  
NRCS Soils data from US Department of Agriculture

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

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. cannot 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.



NRCS Soils Map

Thorndyke Resource  
Jefferson County, Washington

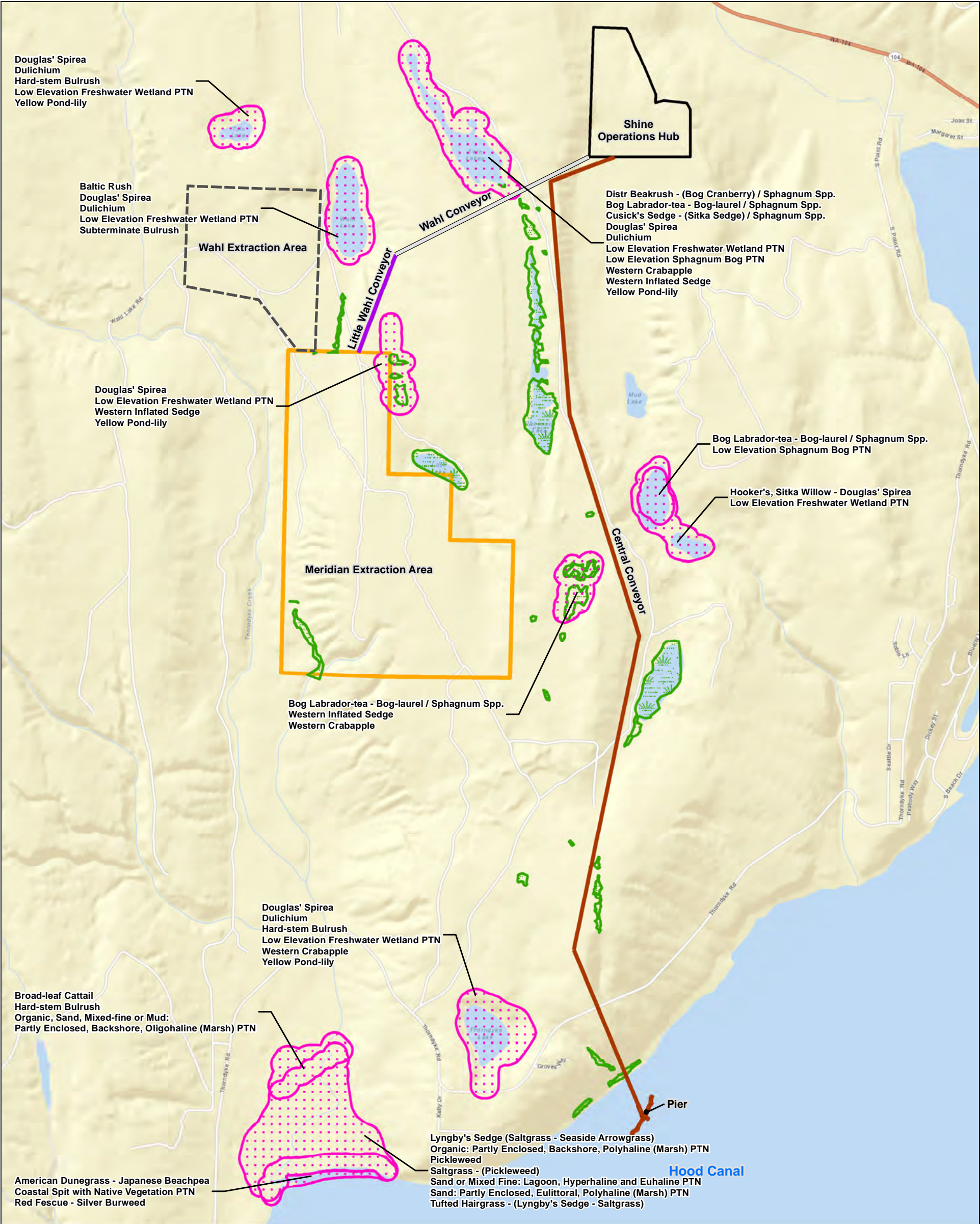
GEOENGINEERS

Figure 15









Little Wahli Conveyor

Central Conveyor

Wahli Conveyor

Meridian Extraction Area Boundary

Operations HUB

Wahli Extraction Area

Wetland Areas Identified

Washington Natural Heritage Program Mapped Features

N

W

E

S

2,000

0

2,000

Feet

Washington Natural Heritage Program Mapped Features

Thorndyke Resource

Jefferson County, Washington

GEOENGINEERS

Figure 17

Data Source: Base map from ESRI Data Online  
NRCS Soils data from US Department of Agriculture  
Habitat data from Washington Natural Heritage Program  
Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet  
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. cannot 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.





A topographic map background with blue contour lines of varying thicknesses. A dashed blue line winds through the map, possibly indicating a path or boundary. The map features several peaks and valleys, with the highest peaks indicated by the most closely spaced contour lines.

## **APPENDIX A**


### **Site Photographs**



**Photograph 1**  
 Buffer associated with Wetland O in the southwest corner of the Meridian Extraction Area.



**Photograph 2**  
 Looking north from Wetland P (within the Meridian Extraction Area) at the young Douglas fir forest starting to establish.

<b>Site Photographs</b>	
Thorndyke Resource Jefferson County, Washington	
<b>GEOENGINEERS</b> 	<b>Figure A-1</b>






**Photograph 3**  
 Typical upland area that has been clear cut. Looking northeast towards Wetland W3.



**Photograph 4**  
 Culvert outlet from Wetland J. Culvert is located under a gravel access road.


Site Photographs	
Thorndyke Resource Jefferson County, Washington	
GEOENGINEERS 	Figure A-2



**Photograph 5**  
Wetland H (along the Central Conveyor) and surrounding upland area.



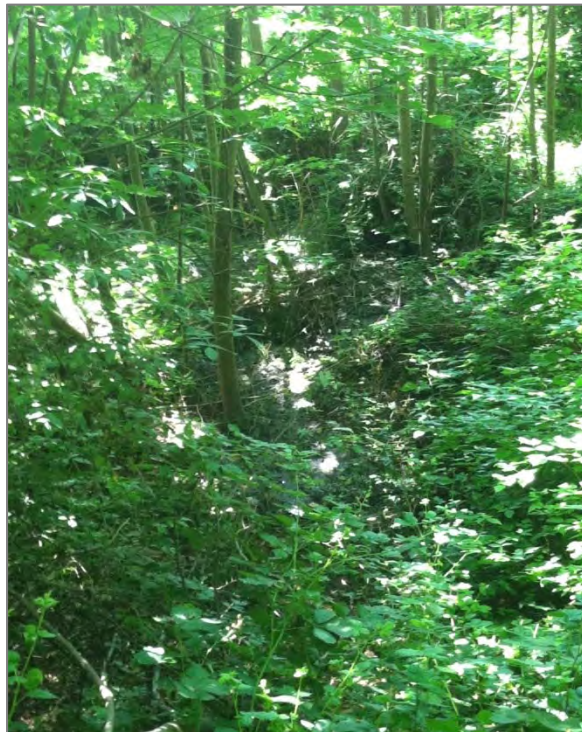
**Photograph 6**  
Wetland I and surrounding upland area.

Site Photographs	
Thorndyke Resource Jefferson County, Washington	
GEOENGINEERS 	Figure A-3






Photograph 7  
Typical upland habitat adjacent to Wetlands K and M



Photograph 8  
Forested habitat between Wetlands A and B.


Site Photographs	
Thorndyke Resource Jefferson County, Washington	
GEOENGINEERS 	Figure A-4



**Photograph 9**  
Wetland B, forested habitat adjacent to the Hood Canal Shoreline.



**Photograph 10**  
Hood Canal Shoreline adjacent to Wetland B.

Site Photographs	
Thorndyke Resource Jefferson County, Washington	
GEOENGINEERS 	Figure A-5



A topographic map background with blue contour lines of varying thicknesses. A dashed blue line winds through the map, starting from the left edge, curving around a central peak, and ending near the bottom center. The map is oriented with North at the top.

# **APPENDIX B**

## **Sample Plot Data Forms**



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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-1

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 12/27N/R01W

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope (%): <3

Subregion (LLR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: Swantown gravelly sandy loam, 0-8 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks: A seep is outletting into a roadside ditch where wetland parameters have been identified.		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1.				Number of dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2.				Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3.				Percent of dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)	
4.				Prevalence Index Worksheet:	
Sapling/Shrub Stratum				Total % Cover of: _____ Multiply by: _____	
1.				OBL Species _____ x 1 = _____	
2.				FACW Species _____ x 2 = _____	
3.				FAC Species _____ x 3 = _____	
4.				FACU Species _____ x 4 = _____	
5.				UPL Species _____ x 5 = _____	
Herb Stratum				Column Totals: <u>0</u> (A) <u>0</u> (B)	
1. Field horsetail ( <i>Equisetum arvense</i> )	20	Y	FAC	Prevalence Index = B/A = <u>#DIV/0!</u>	
2. Common rush ( <i>Juncus effusus</i> )	15	N	FACW	Hydrophytic Vegetation Indicators:	
3. Velvetgrass ( <i>Holcus lanatus</i> )	50	Y	FAC	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
4.				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
5.				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
6.				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet.	
7.				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
8.				<input type="checkbox"/> Problem Hydrophytic Vegetation (Explain)	
9.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10.				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
11.					
Woody Vine Stratum					
1.					
2.					
% Bare Ground in Herb Stratum <u>0</u>					
Remarks:					

## SOIL

Sampling Point: SP-1

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-16	2.5Y 4/2	100					sandy gravel	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Depth (inches): _____		
Depth (inches): _____ 14		
Depth (inches): _____ Surface		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-2

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 12/27N/R01W

Landform (hillslope, terrace, etc.): slope Local Relief (concave, convex, none): N/A Slope (%): <3

Subregion (LLR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: Swantown gravelly sandy loam, 0-8 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b> Number of dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: OBL Species _____ x 1 = _____ FACW Species _____ x 2 = _____ FAC Species _____ x 3 = _____ FACU Species _____ x 4 = _____ UPL Species _____ x 5 = _____ Column Totals: <u>0</u> (A) _____ (B) Prevalence Index = B/A = <u>#DIV/0!</u> Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet. <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problem Hydrophytic Vegetation (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>1. Red alder (<i>Alnus rubra</i>)</b>	70	Y	FAC	
<b>2.</b>				
<b>3.</b>				
<b>4.</b>				
	70	= Total Cover		
<b>Sapling/Shrub Stratum</b>				
<b>1. Salmonberry (<i>Rubus spectabilis</i>)</b>	50	Y	FAC	
<b>2.</b>				
<b>3.</b>				
<b>4.</b>				
<b>5.</b>				
	50	= Total Cover		
<b>Herb Stratum</b>				
<b>1. Field horsetail (<i>Equisetum arvense</i>)</b>	15	Y	FAC	
<b>2. Skunkcabbage (<i>Lysichiton americanus</i>)</b>	20	Y	OBL	
<b>3. Lady fern (<i>Athyrium filix-femina</i>)</b>	10	N	FAC	
<b>4. Brackenfern (<i>Pteridium aquilinum</i>)</b>	10	N	FACU	
<b>5.</b>				
<b>6.</b>				
<b>7.</b>				
<b>8.</b>				
<b>9.</b>				
<b>10.</b>				
<b>11.</b>				
	55	= Total Cover		
<b>Woody Vine Stratum</b>				
<b>1.</b>				
<b>2.</b>				
	0	= Total Cover		
% Bare Ground in Herb Stratum <u>5</u>				
Remarks:				
Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				



## SOIL

Sampling Point: SP-2

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-16	10YR 2/1	100					Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Depth (inches): _____		
Depth (inches): _____ 10		
Depth (inches): _____ Surface		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-3

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 6/27N/R01E

Landform (hillslope, terrace, etc.): depression Local Relief (concave, convex, none): concave Slope (%): N/A

Subregion (LLR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: Dabob very gravelly sandy loam, 0-15 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b> Number of dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <i>Western red cedar (Thuja plicata)</i>	10	Y	FAC	
2.				
3.				
4.				
10 = Total Cover				<b>Prevalence Index Worksheet:</b> Total % Cover of: <u>140</u> Multiply by: OBL Species _____ x 1 = <u>0</u> FACW Species _____ x 2 = <u>0</u> FAC Species _____ x 3 = <u>0</u> FACU Species _____ x 4 = <u>0</u> UPL Species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>#DIV/0!</u>
= Total Cover				
140 = Total Cover				
<b>Herb Stratum</b> 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet. <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problem Hydrophytic Vegetation (Explain)
0 = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
0 = Total Cover				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				

## SOIL

Sampling Point: SP-3

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-16	10YR 2/1	100					Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:  
Soils contained organic materials

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Depth (inches): _____		
Depth (inches): <u>Surface</u>		
Depth (inches): <u>Surface</u>		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-4

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 6/27N/R01E

Landform (hillslope, terrace, etc.): slope Local Relief (concave, convex, none): N/A Slope (%): <3

Subregion (LLR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: Dabob very gravelly sandy loam, 0-15 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <i>Red alder (Alnus rubra)</i>	5	Y	FAC	Number of dominant Species That are OBL, FACW, or FAC:	5 (A)
2. <i>Western red cedar (Thuja plicata)</i>	5	Y	FAC		
3.					
4.					
	10	= Total Cover		Total Number of Dominant Species Across All Strata:	5 (B)
Sapling/Shrub Stratum				Percent of dominant Species That are OBL, FACW, or FAC:	100 (A/B)
1. <i>Salmonberry (Rubus spectabilis)</i>	10	Y	FAC		
2. <i>Rose spirea (Spiraea douglasii)</i>	10	Y	FACW		
3.					
4.					
5.				Prevalence Index Worksheet:	
	20	= Total Cover		Total % Cover of:	Multiply by:
Herb Stratum				OBL Species	x 1 = 0
1. <i>Field horsetail (Equisetum arvense)</i>	5	N	FAC	FACW Species	x 2 = 0
2. <i>Slough sedge (Carex obnupta)</i>	40	Y	OBL	FAC Species	x 3 = 0
3.				FACU Species	x 4 = 0
4.				UPL Species	x 5 = 0
5.				Column Totals:	0 (A) 0 (B)
6.					
7.					
8.					
9.					
10.					
11.					
	45	= Total Cover		Prevalence Index = B/A =	#DIV/0!
Woody Vine Stratum				Hydrophytic Vegetation Indicators:	
1.				<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2.				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
% Bare Ground in Herb Stratum 0				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet.	
Remarks:				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
				<input type="checkbox"/> Problem Hydrophytic Vegetation (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

## SOIL

Sampling Point: SP-4

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-8	10YR 3/1	95	10YR 4/6	5	C	PL	Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):	Hydric Soil Present?
Type: <u>Rock</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Depth (inches): <u>8</u>	

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Depth (inches): _____		
Depth (inches): _____		
Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Wetland drains to a culvert that directs water under the roadway.

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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-5

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 6/27N/R01E

Landform (hillslope, terrace, etc.): slope Local Relief (concave, convex, none): N/A Slope (%): <3

Subregion (LLR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: Dabob very gravelly sandy loam, 0-15 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☒ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1.				Number of dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2.					
3.				Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
4.					
	0	= Total Cover			
Sapling/Shrub Stratum				Percent of dominant Species That are OBL, FACW, or FAC: <u>66.66666667</u> (A/B)	
1. <i>Salmonberry (Rubus spectabilis)</i>	10	Y	FAC		
2.					
3.					
4.				Prevalence Index Worksheet:	
5.				Total % Cover of:	Multiply by:
	10	= Total Cover		OBL Species	x 1 = <u>0</u>
Herb Stratum				FACW Species	x 2 = <u>0</u>
1. <i>Slough sedge (Carex obnupta)</i>	40	Y	OBL	FAC Species	x 3 = <u>0</u>
2. <i>Common tansey (Tanacetum vulgare)</i>	40	Y	NI	FACU Species	x 4 = <u>0</u>
3.				UPL Species	x 5 = <u>0</u>
4.				Column Totals:	<u>0</u> (A) <u>0</u> (B)
5.				Prevalence Index = B/A = <u>#DIV/0!</u>	
6.				Hydrophytic Vegetation Indicators:	
7.				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
8.				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
9.				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
10.				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet.	
11.				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
	80	= Total Cover		<input type="checkbox"/> Problem Hydrophytic Vegetation (Explain)	
Woody Vine Stratum				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1.				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2.					
	0	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					
Remarks:					



## SOIL

Sampling Point: SP-5

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-6	2.5Y 2.5/1	95	2.5Y 3/3	5	C	M	Loamy sand	
6-16	2.5Y 5/3	90	2.5y 5/6	10	C	M	Sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-6

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 6/27N/R01E

Landform (hillslope, terrace, etc.): slope Local Relief (concave, convex, none): N/A Slope (%): <3

Subregion (LLR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: Sinclair gravelly sandy loam, 0-15 percent slopes NWI Classification: PEMUBFH

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☒ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b> Number of dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <i>Western red cedar (Thuja plicata)</i>	5	Y	FAC	
2.				
3.				
4.				
5		= Total Cover		<b>Prevalence Index Worksheet:</b> Total % Cover of: _____ Multiply by: OBL Species _____ x 1 = _____ FACW Species _____ x 2 = _____ FAC Species _____ x 3 = _____ FACU Species _____ x 4 = _____ UPL Species _____ x 5 = _____ Column Totals: <u>0</u> (A) _____ (B) Prevalence Index = B/A = <u>#DIV/0!</u>
Sapling/Shrub Stratum				
1. <i>Rose spirea (Spiraea douglasii)</i>	10	Y	FACW	
2.				
3.				
4.				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet. <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problem Hydrophytic Vegetation (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum				
1. <i>Comon rush (Juncus effusus)</i>	15	Y	FACW	
2. <i>Unidentified Aquatic Grass</i>	10	Y	OBL	
3. <i>Creeping buttercup (Ranunculus repens)</i>	5	N	FACW	
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
30		= Total Cover		% Bare Ground in Herb Stratum <u>0</u>
Woody Vine Stratum				
1.				
2.				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Unidentified aquatic grass is assumed to be an obligate speceis as it appeared healthy and was growing in standing water.				

## SOIL

Sampling Point: SP-6

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-6	2.5Y 2.5/1	95	2.5Y 3/3	5	C	M	Loamy sand	
6-16	2.5Y 5/3	90	2.5y 5/6	10	C	M	Sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-7

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 7/27N/R01E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope (%):           

Subregion (LLR): A Lat:            Long:            Datum:           

Soil Map Unit Name: Sinclair gravelly sandy loam, 0-15 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☒ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b> Number of dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)
1.				
2.				
3.				
4.				
= Total Cover				
Sapling/Shrub Stratum				
1. <i>Scouler's willow (Salix scouleriana)</i>	15	Y	FAC	<b>Prevalence Index Worksheet:</b> Total % Cover of: <u>15</u> Multiply by: OBL Species <u>          </u> x 1 = <u>0</u> FACW Species <u>          </u> x 2 = <u>0</u> FAC Species <u>          </u> x 3 = <u>0</u> FACU Species <u>          </u> x 4 = <u>0</u> UPL Species <u>          </u> x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>#DIV/0!</u>
2.				
3.				
4.				
5.				
= Total Cover				
Herb Stratum				
1. <i>Slough sedge (Carex obnupta)</i>	40	Y	OBL	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet. <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problem Hydrophytic Vegetation (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Water parsley (Oenanthe sarmentosa)</i>	10	N	OBL	
3. <i>Lady fern (Athyrium filix-femina)</i>	5	N	FAC	
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
= Total Cover				
Woody Vine Stratum				
1.				
2.				
= Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## SOIL

Sampling Point: SP-7

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-16	5YR 2.5/1	95	5YR 3/4	5	C	PL	Loamy sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Depth (inches): _____	

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Depth (inches): _____		
Depth (inches): _____		
Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/25/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-8

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 17/27N/R01E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope (%):           

Subregion (LLR): A Lat:            Long:            Datum:           

Soil Map Unit Name: Everett gravelly sandy loam, 0-15 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☒ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b> Number of dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That are OBL, FACW, or FAC: <u>50</u> (A/B)
1. <i>Red alder (Alnus rubra)</i>	90	Y	FAC	
2. <i>Douglas fir (Pseudotsuga menziesii)</i>	10	N	FACU	
3.				
4.				
	100	= Total Cover		
Sapling/Shrub Stratum				<b>Prevalence Index Worksheet:</b> Total % Cover of: <u>35</u> Multiply by: OBL Species <u>80</u> x 1 = <u>80</u> FACW Species <u>          </u> x 2 = <u>0</u> FAC Species <u>90</u> x 3 = <u>270</u> FACU Species <u>40</u> x 4 = <u>160</u> UPL Species <u>10</u> x 5 = <u>50</u> Column Totals: <u>220</u> (A) <u>560</u> (B)  Prevalence Index = B/A = <u>2.55</u>
1. <i>Salal (Gaultheria shallon)</i>	25	Y	FACU	
2. <i>California huckleberry (Vaccinium ovatum)</i>	10	Y	NI	
3.				
4.				
5.				
	35	= Total Cover		
Herb Stratum				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet. <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problem Hydrophytic Vegetation (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Slough sedge (Carex obnupta)</i>	80	Y	OBL	
2. <i>Brackenfern (Pteridium aquilinum)</i>	5	N	FACU	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	85	= Total Cover		
Woody Vine Stratum				
1.				
2.				
	0	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## SOIL

Sampling Point: SP-8

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-16	10YR 3/3	98	10YR 4/6	2	C	M	Loamy sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:  
Evidence of wetland hydrology is present and there is a dominance of hydrophytic vegetation in this area. Therefore hydric soils are assumed to be present.

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
According to the 2001 delineation report, this area was flooded during the December delineation.



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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/26/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-9

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 17/27N/R01E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope (%): <2

Subregion (LLR): A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: Semiahmoo muck, shallow variant NWI Classification: PEMABSSCH

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☒ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <i>Red alder (Alnus rubra)</i>	5	Y	FAC	Number of dominant Species That are OBL, FACW, or FAC:	<b>4</b> (A)
2. <i>Western red cedar (Thuja plicata)</i>	5	Y	FAC	Total Number of Dominant Species Across All Strata:	<b>4</b> (B)
3.				Percent of dominant Species That are OBL, FACW, or FAC:	<b>100</b> (A/B)
4.				Prevalence Index Worksheet:	
	10	= Total Cover		Total % Cover of:	Multiply by:
Sapling/Shrub Stratum				OBL Species	x 1 = 0
1. <i>Scouler's willow (Salix scouleriana)</i>	5	Y	FAC	FACW Species	x 2 = 0
2.				FAC Species	x 3 = 0
3.				FACU Species	x 4 = 0
4.				UPL Species	x 5 = 0
5.				Column Totals:	0 (A) 0 (B)
	5	= Total Cover		Prevalence Index = B/A = #DIV/0!	
Herb Stratum				Hydrophytic Vegetation Indicators:	
1. <i>Slough sedge (Carex obnupta)</i>	40	Y	OBL	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2. <i>Common rush (Juncus effusus)</i>	10	N	FACW	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3. <i>Floating pondweed (Potamogeton natans)</i>	10	N	OBL	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4.				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet.	
5.				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
6.				<input type="checkbox"/> Problem Hydrophytic Vegetation (Explain)	
7.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8.				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
9.					
10.					
11.					
	60	= Total Cover			
Woody Vine Stratum					
1.					
2.					
	0	= Total Cover			
% Bare Ground in Herb Stratum	0				
Remarks:					

## SOIL

Sampling Point: SP-9

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-16	10YR 2/1	100					Loamy sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____ Depth (inches): _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?	
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (inches):	
Water Table Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (inches):	2
Saturation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (inches):	Surface

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/26/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-10

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 17/27N/R01E

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope (%):           

Subregion (LLR): A Lat:            Long:            Datum:           

Soil Map Unit Name: Everett gravelly sandy loam, 0-15 percent slopes NWI Classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☒ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Remarks:		

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b> Number of dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) Prevalence Index Worksheet: Total % Cover of: <u>          </u> Multiply by: <u>          </u> OBL Species <u>          </u> x 1 = <u>0</u> FACW Species <u>          </u> x 2 = <u>0</u> FAC Species <u>          </u> x 3 = <u>0</u> FACU Species <u>          </u> x 4 = <u>0</u> UPL Species <u>          </u> x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>#DIV/0!</u> Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet. <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problem Hydrophytic Vegetation (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Red alder (Alnus rubra)</i>	10	Y	FAC	
2.				
3.				
4.				
	10	= Total Cover		
Sapling/Shurb Stratum				
1.				
2.				
3.				
4.				
5.				
	0	= Total Cover		
Herb Stratum				
1. <i>Slough sedge (Carex obnupta)</i>	80	Y	OBL	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	80	= Total Cover		
Woody Vine Stratum				
1.				
2.				
	0	= Total Cover		
% Bare Ground in Herb Stratum <u>5</u>				
Remarks:				
Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

## SOIL

Sampling Point: SP-10

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-16	7.5YR 3/2	95	7.5YR 4/4	5	C	M	Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	<input type="checkbox"/> Very Shallow Dard Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):	Hydric Soil Present?
Type: _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Depth (inches): _____	

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Depth (inches): _____		
Depth (inches): _____		
Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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

Project/Site: Thorndyke Resources City/County: Jefferson Sampling Date: 7/26/2013

Applicant/Owner: Fred Hill Materials State: WA Sampling Point: SP-11

Investigator(s): J. Dadisman, A. Wright Section/Township/Range: 17/27N/R01W

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope (%):           

Subregion (LLR): A Lat:            Long:            Datum:           

Soil Map Unit Name: Coastal Beaches NWI Classification: E2AB/USN

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☒ No (if no, explain in Remarks.)

Are ☐ Vegetation ☐ Soil ☐ Hydrology significantly disturbed? Are "normal circumstances" present? ☒ Yes ☐ No

Are ☐ Vegetation ☐ Soil ☐ Hydrology naturally problematic? (if needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sampled area within a Wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soil Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Remarks:			

## VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <i>Red alder (Alnus rubra)</i>	5	Y	FAC	Number of dominant Species That are OBL, FACW, or FAC:	<b>3</b> (A)
2. <i>Pacific willow (Salix lasiandra)</i>	5	Y	FACW		
3.					
4.					
	10	= Total Cover		Total Number of Dominant Species Across All Strata:	<b>4</b> (B)
Sapling/Shrub Stratum				Percent of dominant Species That are OBL, FACW, or FAC:	<b>75</b> (A/B)
1. <i>Scouler's willow (Salix scouleriana)</i>	5	Y	FAC		
2.					
3.					
4.					
5.					
	5	= Total Cover		Prevalence Index Worksheet:	
				Total % Cover of:	Multiply by:
Herb Stratum				OBL Species	x 1 = 0
1. <i>Silver bur ragweed (Ambrosia chamissonis)</i>	10	N	NI	FACW Species	x 2 = 0
2. <i>American dunegrass (Leymus mollis)</i>	60	Y	FACU	FAC Species	x 3 = 0
3. <i>Common rush (Juncus effusus)</i>	5	N	FACW	FACU Species	x 4 = 0
4.				UPL Species	x 5 = 0
5.				Column Totals:	0 (A) 0 (B)
6.					
7.					
8.					
9.					
10.					
11.					
	75	= Total Cover		Prevalence Index = B/A =	#DIV/0!
Woody Vine Stratum				Hydrophytic Vegetation Indicators:	
1.				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2.				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet.	
				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
				<input type="checkbox"/> Problem Hydrophytic Vegetation (Explain)	
	0	= Total Cover		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
% Bare Ground in Herb Stratum <u>5</u>					
Remarks:				Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## SOIL

Sampling Point: SP-11

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
							<b>sand</b>	no color

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>  <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input checked="" type="checkbox"/> Other (Explain in Remarks)  <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(except MLRA 1)</b>	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

**Restrictive Layer (if present):**

Type: _____	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Depth (inches): _____	

Remarks:  
Soils are assumed to be hydric because the area is below the ordinary high water line and is regularly inundated by marine waters.

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)				Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(except MLRA 1, 2, 4A, and 4B)</b>	<input type="checkbox"/> Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturated Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduction Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>			
<input type="checkbox"/> Surface Soil Cracks (B6)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)					
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)					

**Field Observations:**

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Wetland area is situated in a depression that regularly is inundated by tidal marine waters. Water is trapped in the depression during high tide events.





## **APPENDIX C**

### **Wetland Rating Forms**

Wetland name or number: A

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland A

Date of site visit: July 26, 2013

Rated by: J. Dadisman Trained by Ecology? Yes X No \_\_\_\_\_ Date of training: 11/06\_\_\_\_\_

SEC: 19 TWNSHP: 27N RNGE: 1W Is S/T/R in Appendix D? Yes X-but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III X IV \_\_\_\_\_

Category I = Score > 70	Score for Water Quality Functions	<b>10</b>
Category II = Score 51 - 69	Score for Hydrologic Functions	<b>8</b>
Category III = Score 30 – 50	Score for Habitat Functions	<b>19</b>
Category IV = Score < 30	TOTAL Score for Functions	<b>37</b>

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply X

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest		Slope	<b>X</b>
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	<b>X</b>	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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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. 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 than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.64)
<b>S 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
	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 (Use NRCS definitions). 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 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 <b>Aerial photo or map with vegetation polygons</b>	Figure ____ 3
<b>Total for S 1</b> Add the points in the boxes above		5
<b>S 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b>	(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. _____ Grazing in the wetland or within 150 ft _____ Untreated stormwater discharges to wetland _____ Tilled fields, logging, or orchards within 150 ft. of wetland <input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 ft. upslope of wetland _____ Other _____ <b>YES multiplier is 2</b> NO multiplier is 1	Multiplier 2
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from S1 by S2; then add score to table on p. 1		10
HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
<b>S 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?</b>	(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, <b>rigid</b> vegetation covers > 90% of the area of the wetland ..... points = 6 • Dense, uncut, <b>rigid</b> vegetation > 1/2 area of wetland ..... points = 3 • Dense, uncut, <b>rigid</b> vegetation > 1/4 area..... points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid ..... points = 0	6
	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		8
<b>S 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b>	(see p. 70)
	Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. _____ Wetland has surface runoff that drains to a river or stream that has flooding problems _____ Other _____ (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 <b>NO multiplier is 1</b>	Multiplier 1
<b>◆ TOTAL – Hydrologic Functions</b> Multiply the score from S3 by S4; then add score to table on p. 1		8

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)																
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.																		
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>																	
H 1.1	<p><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.</p> <p> <input type="checkbox"/> Aquatic Bed  <input type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)  If the unit has a forested class check if:  <input checked="" type="checkbox"/> 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: </p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>3 structures..... points = 2</td> <td></td> </tr> <tr> <td>2 structures..... <b>points = 1</b></td> <td>1 structure..... points = 0</td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	3 structures..... points = 2		2 structures..... <b>points = 1</b>	1 structure..... points = 0	<p>Figure ____</p> <p><b>1</b></p>										
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3 structures..... points = 2																		
2 structures..... <b>points = 1</b>	1 structure..... points = 0																	
H 1.2	<p><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).</p> <table border="0"> <tr> <td><input type="checkbox"/> Permanently flooded or inundated</td> <td>4 or more types present points = 3</td> </tr> <tr> <td><input type="checkbox"/> Seasonally flooded or inundated</td> <td>3 or more types present..... points = 2</td> </tr> <tr> <td><input type="checkbox"/> Occasionally flooded or inundated</td> <td>2 types present..... <b>points = 1</b></td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td>1 type present..... points = 0</td> </tr> <tr> <td><input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</td> <td></td> </tr> <tr> <td><input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b></td> <td></td> </tr> <tr> <td><input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b></td> <td></td> </tr> </table> <p style="text-align: right;"><b>Map of hydroperiods</b></p>	<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3	<input type="checkbox"/> Seasonally flooded or inundated	3 or more types present..... points = 2	<input type="checkbox"/> Occasionally flooded or inundated	2 types present..... <b>points = 1</b>	<input checked="" type="checkbox"/> Saturated only	1 type present..... points = 0	<input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland		<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		<input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b>		<input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b>		<p>Figure ____</p> <p><b>1</b></p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3																	
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<input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b>																		
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75):  Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold)  You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted: </p> <table border="0"> <tr> <td>&gt; 19 species..... points = 2</td> </tr> <tr> <td>5 – 19 species..... <b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species..... points = 0</td> </tr> </table> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	> 19 species..... points = 2	5 – 19 species..... <b>points = 1</b>	< 5 species..... points = 0	<p><b>1</b></p>													
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< 5 species..... points = 0																		
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points      Low = 1 point      Moderate = 2 points</p> <p>High = 3 points      [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>																
H 1.5	<p><u>Special Habitat Features</u> (see p. 77):  Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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. </p>	<p><b>3</b></p>																
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>6</b>																



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (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".</p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>  &gt; 95% of circumference. No structures are within the undisturbed part of buffer  (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;  95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.  Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference  (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>2</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___X___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = 0 points</p> <p><i>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)</i></p>	1
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	13
	<p><i>TOTAL for H 1 from page 8</i></p>	6
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	19



## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
SC1	<b>Estuarine wetlands?</b> (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 <u>X</u>	
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. _____ 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.	Cat. I  Cat. II  Dual Rating I/II
SC2	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <u>X</u> YES <u>X</u> Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO <u>X</u> not a Heritage Wetland	Cat I
SC3	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? YES = Category I NO = Is not a bog for purpose of rating	Cat. I

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X_____ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO X_____ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO X_____ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



Wetland name or number: B

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland B

Date of site visit: July 26, 2013

Rated by: J. Dadisman Trained by Ecology? Yes X No \_\_\_\_\_ Date of training: 11/06\_\_\_\_\_

SEC: 19 TWNSHP: 27N RNGE: 1W Is S/T/R in Appendix D? Yes X-but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III X IV \_\_\_\_\_

Category I = Score > 70	Score for Water Quality Functions	<b>14</b>
Category II = Score 51 - 69	Score for Hydrologic Functions	<b>8</b>
Category III = Score 30 – 50	Score for Habitat Functions	<b>23</b>
Category IV = Score < 30	TOTAL Score for Functions	<b>45</b>

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II X Does not apply \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**II**

**Summary of basic information about the wetland unit.**

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

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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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.

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

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 3</li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... <b>points = 2</b></li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not <i>permanently flowing</i> treat unit as “<i>intermittently flowing</i>”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  2
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... points = 4</li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... <b>points = 0</b></li> </ul> <b>Map of Hydroperiods</b>	Figure ____  0
<b>Total for D 1</b> Add the points in the boxes above		7
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> _____ 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 <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland _____ Wetland is fed by groundwater high in phosphorus or nitrogen _____ Other _____ <b>YES multiplier is 2</b> NO multiplier is 1	Multiplier  2
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <b>add score to table on p. 1</b>		14
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 4</li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... <b>points = 2</b></li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not <i>permanently flowing</i> treat unit as “<i>intermittently flowing</i>”)  <ul style="list-style-type: none"> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul> </li> </ul>	2
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... <b>points = 3</b></li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	3
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> Add the points in the boxes above		8
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: B

	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> ____ 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	
◆	<b>TOTAL – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	8

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>	
H 1.1	<p><b>Vegetation structure</b> (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.</p> <p><input checked="" type="checkbox"/> Aquatic Bed  <input checked="" type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)  If the unit has a forested class check if:  <input checked="" type="checkbox"/> 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:</p> <p>4 structures or more ..... points = 4  3 structures ..... points = 2  2 structures ..... points = 1  1 structure ..... points = 0</p> <p><b>Map of Cowardin vegetation classes</b></p>	<p><b>Figure</b> ____</p> <p><b>2</b></p>
H 1.2	<p><b>Hydroperiods</b> (see p.73):  Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).</p> <p><input checked="" type="checkbox"/> Permanently flooded or inundated  <input type="checkbox"/> Seasonally flooded or inundated  <input type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only  <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland  <input type="checkbox"/> Lake-fringe wetland ..... = 2 points  <input type="checkbox"/> Freshwater tidal wetland ..... = 2 points</p> <p><b>Map of hydroperiods</b></p>	<p><b>Figure</b> ____</p> <p><b>2</b></p>
H 1.3	<p><b>Richness of Plant Species</b> (see p. 75):  Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold)  You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.  If you counted: &gt; 19 species ..... points = 2  5 – 19 species ..... points = 1  &lt; 5 species ..... points = 0</p> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>1</b></p>
H 1.4	<p><b>Interspersion of Habitats</b> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p><b>Figure</b> ____</p> <p><b>2</b></p>
H 1.5	<p><b>Special Habitat Features</b> (see p. 77):  Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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.</p>	<p><b>3</b></p>
<b>H 1 TOTAL Score</b> – potential for providing habitat		<b>10</b>



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (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".</p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>  &gt; 95% of circumference. No structures are within the undisturbed part of buffer  (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;  95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.  Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference  (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>2</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___X___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = 0 points</p> <p><i>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)</i></p>	1
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	13
	<p><i>TOTAL for H 1 from page 8</i></p>	10
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	23



### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (see p. 86) Does the wetland unit meet the following criteria for Estuarine wetlands? <input checked="" type="checkbox"/> The dominant water regime is tidal, <input checked="" type="checkbox"/> Vegetated, and <input checked="" type="checkbox"/> With a salinity greater than 0.5 ppt. <div style="text-align: right;"> <b>YES = Go to SC 1.1</b>                      NO _____         </div>	
	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 <b>NO = go to SC 1.2</b>	<b>Cat. 1</b>
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I <b>NO = Category II</b> <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> 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 <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <input checked="" type="checkbox"/> YES <input checked="" type="checkbox"/> Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1                      NO <input checked="" type="checkbox"/> not a Heritage Wetland	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X_____ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO X_____ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO X_____ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



Wetland name or number: C

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland C

Date of site visit: July 26, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 8 and 17 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes X-but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II X III \_\_\_\_\_ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**9**

Score for Hydrologic Functions

**24**

Score for Habitat Functions

**30**

TOTAL Score for Functions

**63**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply X

**Final Category** (choose the “highest” category from above)

**II**

**Summary of basic information about the wetland unit.**

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	

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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 3</li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  2
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO points = 0	4
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... points = 5</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  3
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... points = 4</li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  0
<b>Total for D 1</b> Add the points in the boxes above		9
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 NO multiplier is 1	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <b>add score to table on p. 1</b>	9
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 4</li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	5
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... points = 3</li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> Add the points in the boxes above		12
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: C

	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	
◆	<b>TOTAL – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	24

Comments:

These questions apply to wetlands of all HGM classes.		Points									
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		(only 1 score per box)									
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>										
H 1.1	<p><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.</p> <p><input checked="" type="checkbox"/> Aquatic Bed  <input checked="" type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>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:</p> <table border="0"> <tr> <td>4 structures or more.....</td> <td>points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures.....</td> <td>points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td></td> <td>1 structure..... points = 0</td> </tr> </table>	4 structures or more.....	points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures.....	points = 1	3 structures..... points = 2			1 structure..... points = 0	<p>Figure ____</p> <p><b>4</b></p>
4 structures or more.....	points = 4	<b>Map of Cowardin vegetation classes</b>									
2 structures.....	points = 1	3 structures..... points = 2									
		1 structure..... points = 0									
H 1.2	<p><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).</p> <p><input checked="" type="checkbox"/> Permanently flooded or inundated  <input checked="" type="checkbox"/> Seasonally flooded or inundated  <input checked="" type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only  <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland          _____ Seasonally flowing stream in, or adjacent to, the wetland          _____ <b>Lake-fringe wetland..... = 2 points</b>          _____ <b>Freshwater tidal wetland..... = 2 points</b></p> <p><b>Map of hydroperiods</b></p>	<p>Figure ____</p> <p><b>3</b></p>									
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species .....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species .....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	> 19 species .....	points = 2	5 – 19 species.....	points = 1	< 5 species .....	points = 0	<p><b>1</b></p>			
> 19 species .....	points = 2										
5 – 19 species.....	points = 1										
< 5 species .....	points = 0										
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="margin-left: 10px;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> </div> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".</p> <p><b>Use map of Cowardin classes</b></p>	<p>Figure ____</p> <p><b>3</b></p>									
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 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)  <input checked="" type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 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)  <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>4</b></p>									
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>15</b>									



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>_X_ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b></p> <p>If wetland has <b>2</b> priority habitats = <b>3 points</b></p> <p>If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = 0 points</p> <p><i>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)</i></p>	1
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	15
	<p><i>TOTAL for H 1 from page 8</i></p>	15
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	30



## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>X</u></div>	
	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	<b>Cat. I</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site X _____ YES X___ Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1                      NO    X___ not a Heritage Wetland	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



Wetland name or number: Wetland D

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland D

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 1 TWNSHP: 27N RNGE: 1W Is S/T/R in Appendix D? Yes ☒ but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**12**

Score for Hydrologic Functions

**7**

Score for Habitat Functions

**19**

TOTAL Score for Functions

**38**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply ☒ X \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

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	

Wetland name or number: Wetland 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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 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.

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

If you are unable still to determine which of the above criteria apply to your wetland, or you have more 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		12
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	12
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... <b>points = 0</b></li> </ul>	0
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		7
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: Wetland D

	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> ____ 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	
◆	<b>TOTAL – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	7

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)						
<b>HABITAT FUNCTIONS</b> – Indicators that wetland functions to provide important habitat.								
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>							
H 1.1	<p><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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover) <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> 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.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>							
2 structures..... points = 1	3 structures..... points = 2							
	1 structure..... <b>points = 0</b>							
H 1.2	<p><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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only</p> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p><input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b> <input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b></p> <p><b>Map of hydroperiods</b></p>	<p>Figure ____</p> <p><b>1</b></p>						
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species..... points = 2</td> </tr> <tr> <td>5 – 19 species..... <b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species..... points = 0</td> </tr> </table> <p>List species below if you want to:</p> <hr/> <hr/> <hr/>	> 19 species..... points = 2	5 – 19 species..... <b>points = 1</b>	< 5 species..... points = 0	<p><b>1</b></p>			
> 19 species..... points = 2								
5 – 19 species..... <b>points = 1</b>								
< 5 species..... points = 0								
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 10px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>						
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long) <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>3</b></p>						
<b>H 1 TOTAL Score</b> – potential for providing habitat		<b>5</b>						



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	5
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	19

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>  X  </u></div>	
	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	<b>Cat. I</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <u>  X  </u> _____ YES <u>  X  </u> Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? <div style="text-align: right;">YES = Category 1                      NO    <u>  X  </u> not a Heritage Wetland</div>	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (see p. 87) Does the wetland ( <b>or any part of the unit</b> ) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? <div style="text-align: right;">YES = Category I                      NO = Is not a bog for purpose of rating</div>	<b>Cat. I</b>



SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: Wetland E (Pheasant Lake)

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland E (Pheasant Lake)

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 6 and 7 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☒ but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**6**

Score for Hydrologic Functions

**12**

Score for Habitat Functions

**27**

TOTAL Score for Functions

**45**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply ☒ X \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		Depressional	<input checked="" type="checkbox"/>
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present	<input type="checkbox"/>

Wetland name or number: Wetland E (Pheasant Lake)

**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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... points = 5</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... <b>points = 3</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  3
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... points = 4</li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... <b>points = 0</b></li> </ul> <b>Map of Hydroperiods</b>	Figure ____  0
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		6
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	6
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... <b>points = 5</b></li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	5
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		12
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: Wetland E (Pheasant Lake)

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

Comments:



These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)									
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.											
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>										
H 1.1	<p><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.</p> <p><input checked="" type="checkbox"/> Aquatic Bed  <input checked="" type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>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:</p> <table border="0"> <tr> <td>4 structures or more.....</td> <td>points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>3 structures.....</td> <td>points = 2</td> <td></td> </tr> <tr> <td>2 structures.....</td> <td>points = 1</td> <td>1 structure ..... points = 0</td> </tr> </table>	4 structures or more.....	points = 4	<b>Map of Cowardin vegetation classes</b>	3 structures.....	points = 2		2 structures.....	points = 1	1 structure ..... points = 0	<p>Figure ____</p> <p><b>4</b></p>
4 structures or more.....	points = 4	<b>Map of Cowardin vegetation classes</b>									
3 structures.....	points = 2										
2 structures.....	points = 1	1 structure ..... points = 0									
H 1.2	<p><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).</p> <p><input checked="" type="checkbox"/> Permanently flooded or inundated  <input checked="" type="checkbox"/> Seasonally flooded or inundated  <input checked="" type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only</p> <p>_____ Permanently flowing stream or river in, or adjacent to, the wetland          _____ Seasonally flowing stream in, or adjacent to, the wetland          _____ <b>Lake-fringe wetland..... = 2 points</b>          _____ <b>Freshwater tidal wetland..... = 2 points</b></p> <p><b>Map of hydroperiods</b></p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present.....</td> <td>points = 2</td> </tr> <tr> <td>2 types present.....</td> <td>points = 1</td> </tr> <tr> <td>1 type present .....</td> <td>points = 0</td> </tr> </table>	4 or more types present	points = 3	3 or more types present.....	points = 2	2 types present.....	points = 1	1 type present .....	points = 0	<p>Figure ____</p> <p><b>2</b></p>	
4 or more types present	points = 3										
3 or more types present.....	points = 2										
2 types present.....	points = 1										
1 type present .....	points = 0										
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species .....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species .....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	> 19 species .....	points = 2	5 – 19 species.....	points = 1	< 5 species .....	points = 0	<p><b>1</b></p>			
> 19 species .....	points = 2										
5 – 19 species.....	points = 1										
< 5 species .....	points = 0										
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>3</b></p>									
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 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 (&gt; 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)  <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>3</b></p>									
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>13</b>									

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	13
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	27



### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>  X  </u></div>	
	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	<b>Cat. I</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site X _____ YES X___ Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? <div style="text-align: right;">YES = Category 1                      NO    X___ not a Heritage Wetland</div>	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? <div style="text-align: right;">YES = Category I                      NO = Is not a bog for purpose of rating</div>	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: Central Conveyor H

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland H

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 6 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☒ but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**12**

Score for Hydrologic Functions

**7**

Score for Habitat Functions

**16**

TOTAL Score for Functions

**35**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply ☒ X \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

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	



Wetland name or number: Central Conveyor 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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> Add the points in the boxes above		12
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <b>add score to table on p. 1</b>	12
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... <b>points = 0</b></li> </ul>	0
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> Add the points in the boxes above		7
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: Central Conveyor H

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

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)								
<b>HABITAT FUNCTIONS</b> – Indicators that wetland functions to provide important habitat.										
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>									
H 1.1	<p><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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover) <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> 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.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>		
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>									
2 structures..... points = 1	3 structures..... points = 2									
	1 structure..... <b>points = 0</b>									
H 1.2	<p><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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p><input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <p><b>Map of hydroperiods</b></p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present.....</td> <td>points = 2</td> </tr> <tr> <td>2 types present.....</td> <td>points = 1</td> </tr> <tr> <td>1 type present .....</td> <td><b>points = 0</b></td> </tr> </table>	4 or more types present	points = 3	3 or more types present.....	points = 2	2 types present.....	points = 1	1 type present .....	<b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 or more types present	points = 3									
3 or more types present.....	points = 2									
2 types present.....	points = 1									
1 type present .....	<b>points = 0</b>									
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species .....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td><b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species .....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <hr/> <hr/> <hr/> <hr/>	> 19 species .....	points = 2	5 – 19 species.....	<b>points = 1</b>	< 5 species .....	points = 0	<p><b>1</b></p>		
> 19 species .....	points = 2									
5 – 19 species.....	<b>points = 1</b>									
< 5 species .....	points = 0									
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>								
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>1</b></p>								
<b>H 1 TOTAL Score</b> – potential for providing habitat		<b>2</b>								

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:



	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	2
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	16

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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 <u>  X  </u>	
	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	<b>Cat. 1</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site X _____ YES X___ Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1                      NO    X___ not a Heritage Wetland	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><b><i>If you answer yes you will still need to rate the wetland based on its functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



Wetland name or number: Meridian Extraction Wetland H

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland H

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 1 TWNSHP: 27N RNGE: 1W Is S/T/R in Appendix D? Yes X-but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III X IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**12**

Score for Hydrologic Functions

**7**

Score for Habitat Functions

**21**

TOTAL Score for Functions

**40**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply X

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		Depressional	<input checked="" type="checkbox"/>
Natural Heritage Wetland		Riverine	
Bog		Lake-fringe	
Mature Forest		Slope	
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present	<input type="checkbox"/>

**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. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> Add the points in the boxes above		12
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <b>add score to table on p. 1</b>	12
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... <b>points = 0</b></li> </ul>	0
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> Add the points in the boxes above		7
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: Meridian Extraction Wetland H

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

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)								
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.										
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>									
H 1.1	<p><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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover) <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>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:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... points = 0</td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... points = 0	<p>Figure ____</p> <p><b>1</b></p>		
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>									
2 structures..... points = 1	3 structures..... points = 2									
	1 structure..... points = 0									
H 1.2	<p><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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only</p> <p>Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland <b>Lake-fringe wetland..... = 2 points</b> <b>Freshwater tidal wetland..... = 2 points</b></p> <p>Map of hydroperiods</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present.....</td> <td>points = 2</td> </tr> <tr> <td>2 types present.....</td> <td>points = 1</td> </tr> <tr> <td>1 type present.....</td> <td>points = 0</td> </tr> </table>	4 or more types present	points = 3	3 or more types present.....	points = 2	2 types present.....	points = 1	1 type present.....	points = 0	<p>Figure ____</p> <p><b>1</b></p>
4 or more types present	points = 3									
3 or more types present.....	points = 2									
2 types present.....	points = 1									
1 type present.....	points = 0									
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species.....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species.....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	> 19 species.....	points = 2	5 – 19 species.....	points = 1	< 5 species.....	points = 0	<p><b>1</b></p>		
> 19 species.....	points = 2									
5 – 19 species.....	points = 1									
< 5 species.....	points = 0									
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="margin-left: 10px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div> <p>None = 0 points    Low = 1 point    Moderate = 2 points    High = 3 points    [riparian braided channels]</p>	<p>Figure ____</p> <p><b>1</b></p>								
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long) <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>3</b></p>								
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>7</b>								



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (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".</p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>  &gt; 95% of circumference. No structures are within the undisturbed part of buffer  (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;  95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.  Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference  (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	7
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	21

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>  X  </u></div>	
	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	<b>Cat. I</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <u>  X  </u> YES <u>  X  </u> Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1                      NO <u>  X  </u> not a Heritage Wetland	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <b><i>If you answer yes you will still need to rate the wetland based on its function.</i></b> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	<b>Cat. I</b>



SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><b><i>If you answer yes you will still need to rate the wetland based on its functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p><i>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</i></p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: I

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland I

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 7 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☒ but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**10**

Score for Hydrologic Functions

**7**

Score for Habitat Functions

**17**

TOTAL Score for Functions

**34**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply ☒ X \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

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	

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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... points = 5</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... <b>points = 3</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  3
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		10
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	10
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... <b>points = 0</b></li> </ul>	0
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		7
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: I

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

Comments:



These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)						
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.								
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>							
H 1.1	<p><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.</p> <p> <input type="checkbox"/> Aquatic Bed  <input type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)            If the unit has a forested class check if:  <input type="checkbox"/> 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:         </p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>							
2 structures..... points = 1	3 structures..... points = 2							
	1 structure..... <b>points = 0</b>							
H 1.2	<p><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).</p> <p> <input type="checkbox"/> Permanently flooded or inundated  <input checked="" type="checkbox"/> Seasonally flooded or inundated  <input type="checkbox"/> Occasionally flooded or inundated  <input type="checkbox"/> Saturated only  <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland  <input type="checkbox"/> Lake-fringe wetland..... = 2 points  <input type="checkbox"/> Freshwater tidal wetland..... = 2 points         </p> <p>           4 or more types present points = 3            3 or more types present..... points = 2            2 types present..... points = 1            1 type present ..... <b>points = 0</b> </p> <p><b>Map of hydroperiods</b></p>	<p>Figure ____</p> <p><b>0</b></p>						
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species .....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td><b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species .....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <hr/> <hr/> <hr/>	> 19 species .....	points = 2	5 – 19 species.....	<b>points = 1</b>	< 5 species .....	points = 0	<p><b>1</b></p>
> 19 species .....	points = 2							
5 – 19 species.....	<b>points = 1</b>							
< 5 species .....	points = 0							
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points    High = 3 points</p> </div> <div style="flex: 1; padding-left: 10px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>						
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input type="checkbox"/> 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.         </p>	<p><b>2</b></p>						
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>3</b>						

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (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".</p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>  &gt; 95% of circumference. No structures are within the undisturbed part of buffer  (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water  for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;  95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.  Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference  (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right; padding-right: 20px;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	3
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	17





SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: J

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland J

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 6

TWNSHP: 27N

RNGE: 1E

Is S/T/R in Appendix D? Yes ☒ but not the NHP Wetland No ☐

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**11**

Score for Hydrologic Functions

**5**

Score for Habitat Functions

**17**

TOTAL Score for Functions

**33**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply ☒ X \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

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	



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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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.

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

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 3</li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  2
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO points = 0	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... points = 5</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... points = 4</li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> Add the points in the boxes above		11
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 NO multiplier is 1	(see p. 44)          Multiplier  1
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <b>add score to table on p. 1</b>		11
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 4</li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	2
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	0
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... points = 3</li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> Add the points in the boxes above		5
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: J

	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> ____ 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	
◆	<b>TOTAL – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	<b>5</b>

Comments:

These questions apply to wetlands of all HGM classes.		Points								
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		(only 1 score per box)								
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>									
H 1.1	<p><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.</p> <p><input type="checkbox"/> Aquatic Bed <input type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>If the unit has a forested class check if: <input checked="" type="checkbox"/> 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.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... points = 0</td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... points = 0	<p>Figure ____</p> <p><b>1</b></p>		
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>									
2 structures..... points = 1	3 structures..... points = 2									
	1 structure..... points = 0									
H 1.2	<p><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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p><b>Lake-fringe wetland..... = 2 points</b> <b>Freshwater tidal wetland..... = 2 points</b></p> <p><b>Map of hydroperiods</b></p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present.....</td> <td>points = 2</td> </tr> <tr> <td>2 types present.....</td> <td>points = 1</td> </tr> <tr> <td>1 type present.....</td> <td>points = 0</td> </tr> </table>	4 or more types present	points = 3	3 or more types present.....	points = 2	2 types present.....	points = 1	1 type present.....	points = 0	<p>Figure ____</p> <p><b>0</b></p>
4 or more types present	points = 3									
3 or more types present.....	points = 2									
2 types present.....	points = 1									
1 type present.....	points = 0									
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species.....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species.....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <hr/> <hr/> <hr/>	> 19 species.....	points = 2	5 – 19 species.....	points = 1	< 5 species.....	points = 0	<p><b>1</b></p>		
> 19 species.....	points = 2									
5 – 19 species.....	points = 1									
< 5 species.....	points = 0									
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points    High = 3 points</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>								
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>1</b></p>								
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>3</b>								

Wetland Rating Form – western Washington, version 2 (7/06)



	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	3
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	17



SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



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 wetland (if known): Wetland K

Date of site visit: July 26, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 17 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**12**

Score for Hydrologic Functions

**7**

Score for Habitat Functions

**18**

TOTAL Score for Functions

**37**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply ☒

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

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	

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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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.

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

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		12
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	12
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... <b>points = 0</b></li> </ul>	0
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		7
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: K

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

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)								
<b>HABITAT FUNCTIONS</b> – Indicators that wetland functions to provide important habitat.										
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>									
H 1.1	<p><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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover) <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> 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:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>		
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>									
2 structures..... points = 1	3 structures..... points = 2									
	1 structure..... <b>points = 0</b>									
H 1.2	<p><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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b> <input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b></p> <p><b>Map of hydroperiods</b></p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present.....</td> <td>points = 2</td> </tr> <tr> <td>2 types present.....</td> <td>points = 1</td> </tr> <tr> <td>1 type present.....</td> <td><b>points = 0</b></td> </tr> </table>	4 or more types present	points = 3	3 or more types present.....	points = 2	2 types present.....	points = 1	1 type present.....	<b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 or more types present	points = 3									
3 or more types present.....	points = 2									
2 types present.....	points = 1									
1 type present.....	<b>points = 0</b>									
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species.....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td><b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species.....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <hr/> <hr/> <hr/>	> 19 species.....	points = 2	5 – 19 species.....	<b>points = 1</b>	< 5 species.....	points = 0	<p><b>1</b></p>		
> 19 species.....	points = 2									
5 – 19 species.....	<b>points = 1</b>									
< 5 species.....	points = 0									
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>								
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long) <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>3</b></p>								
<b>H 1 TOTAL Score</b> – potential for providing habitat		<p>Add the points in the column above</p> <p><b>4</b></p>								



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	4
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	18





SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

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 wetland (if known): Wetland M

Date of site visit: July 26, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 17 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**12**

Score for Hydrologic Functions

**7**

Score for Habitat Functions

**18**

TOTAL Score for Functions

**37**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply ☒

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

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	

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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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.

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

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		12
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	12
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... <b>points = 0</b></li> </ul>	0
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		7
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: M

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

Comments:



These questions apply to wetlands of all HGM classes.		Points								
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		(only 1 score per box)								
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>									
H 1.1	<p><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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover) <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover) If the unit has a forested class check if: <input type="checkbox"/> 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:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>		
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>									
2 structures..... points = 1	3 structures..... points = 2									
	1 structure..... <b>points = 0</b>									
H 1.2	<p><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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b> <input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b></p> <p><b>Map of hydroperiods</b></p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present.....</td> <td>points = 2</td> </tr> <tr> <td>2 types present.....</td> <td>points = 1</td> </tr> <tr> <td>1 type present.....</td> <td><b>points = 0</b></td> </tr> </table>	4 or more types present	points = 3	3 or more types present.....	points = 2	2 types present.....	points = 1	1 type present.....	<b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 or more types present	points = 3									
3 or more types present.....	points = 2									
2 types present.....	points = 1									
1 type present.....	<b>points = 0</b>									
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species.....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td><b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species.....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <hr/> <hr/> <hr/> <hr/>	> 19 species.....	points = 2	5 – 19 species.....	<b>points = 1</b>	< 5 species.....	points = 0	<p><b>1</b></p>		
> 19 species.....	points = 2									
5 – 19 species.....	<b>points = 1</b>									
< 5 species.....	points = 0									
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 10px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>								
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long) <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> 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.</p>	<p><b>3</b></p>								
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>4</b>								

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	4
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	18



### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>  X  </u></div>	
	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	<b>Cat. 1</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site X _____ YES _____ Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO <u>  X  </u> 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 <u>  X  </u> not a Heritage Wetland	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: Wetland 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 wetland (if known): Wetland O

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes X No \_\_\_\_\_ Date of training: 11/06\_\_\_\_\_

SEC: 12 TWNSHP: 27N RNGE: 1W Is S/T/R in Appendix D? Yes X-but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III X IV \_\_\_\_\_

Category I = Score > 70	Score for Water Quality Functions	<b>5</b>
Category II = Score 51 - 69	Score for Hydrologic Functions	<b>16</b>
Category III = Score 30 – 50	Score for Habitat Functions	<b>21</b>
Category IV = Score < 30	TOTAL Score for Functions	<b>42</b>

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply X

**Final Category** (choose the “highest” category from above)

**III**

**Summary of basic information about the wetland unit.**

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



Wetland name or number: Wetland 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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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. 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 than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.64)
<b>S 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
	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 (Use NRCS definitions). 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 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 <b>Aerial photo or map with vegetation polygons</b>	Figure ____ 3
<b>Total for S 1</b> Add the points in the boxes above		5
<b>S 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b>	(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. _____ 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	Multiplier 1
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from S1 by S2; then add score to table on p. 1		5
HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
<b>S 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?</b>	(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, <b>rigid</b> vegetation covers > 90% of the area of the wetland ..... points = 6 • Dense, uncut, <b>rigid</b> vegetation > 1/2 area of wetland ..... points = 3 • Dense, uncut, <b>rigid</b> vegetation > 1/4 area..... points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid ..... points = 0	6
	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		8
<b>S 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b>	(see p. 70)
	Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. X 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	Multiplier 2
<b>◆ TOTAL – Hydrologic Functions</b> Multiply the score from S3 by S4; then add score to table on p. 1		16

Comments:



These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)																
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.																		
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>																	
H 1.1	<p><b>Vegetation structure</b> (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.</p> <p> <input type="checkbox"/> Aquatic Bed  <input type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)  If the unit has a forested class check if:  <input checked="" type="checkbox"/> 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: </p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>3 structures..... points = 2</td> <td></td> </tr> <tr> <td>2 structures..... <b>points = 1</b></td> <td>1 structure..... points = 0</td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	3 structures..... points = 2		2 structures..... <b>points = 1</b>	1 structure..... points = 0	<p>Figure ____</p> <p><b>1</b></p>										
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>																	
3 structures..... points = 2																		
2 structures..... <b>points = 1</b>	1 structure..... points = 0																	
H 1.2	<p><b>Hydroperiods</b> (see p.73):  Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).</p> <table border="0"> <tr> <td><input type="checkbox"/> Permanently flooded or inundated</td> <td>4 or more types present points = 3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Seasonally flooded or inundated</td> <td>3 or more types present..... <b>points = 2</b></td> </tr> <tr> <td><input type="checkbox"/> Occasionally flooded or inundated</td> <td>2 types present..... points = 1</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td>1 type present..... points = 0</td> </tr> <tr> <td><input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Lake-fringe wetland..... = 2 points</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Freshwater tidal wetland..... = 2 points</td> <td></td> </tr> </table> <p style="text-align: right;"><b>Map of hydroperiods</b></p>	<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3	<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 or more types present..... <b>points = 2</b>	<input type="checkbox"/> Occasionally flooded or inundated	2 types present..... points = 1	<input checked="" type="checkbox"/> Saturated only	1 type present..... points = 0	<input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland		<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		<input type="checkbox"/> Lake-fringe wetland..... = 2 points		<input type="checkbox"/> Freshwater tidal wetland..... = 2 points		<p>Figure ____</p> <p><b>2</b></p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3																	
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 or more types present..... <b>points = 2</b>																	
<input type="checkbox"/> Occasionally flooded or inundated	2 types present..... points = 1																	
<input checked="" type="checkbox"/> Saturated only	1 type present..... points = 0																	
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<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland																		
<input type="checkbox"/> Lake-fringe wetland..... = 2 points																		
<input type="checkbox"/> Freshwater tidal wetland..... = 2 points																		
H 1.3	<p><b>Richness of Plant Species</b> (see p. 75):  Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold)  You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted: </p> <table border="0"> <tr> <td>&gt; 19 species..... points = 2</td> </tr> <tr> <td>5 – 19 species..... <b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species..... points = 0</td> </tr> </table> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	> 19 species..... points = 2	5 – 19 species..... <b>points = 1</b>	< 5 species..... points = 0	<p><b>1</b></p>													
> 19 species..... points = 2																		
5 – 19 species..... <b>points = 1</b>																		
< 5 species..... points = 0																		
H 1.4	<p><b>Interspersion of Habitats</b> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>																
H 1.5	<p><b>Special Habitat Features</b> (see p. 77):  Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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. </p>	<p><b>3</b></p>																
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>7</b>																

Wetland Rating Form – western Washington, version 2 (7/06)

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	7
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	21

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> ( <i>see p.86</i> ) Does the wetland unit meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <div style="text-align: center;">YES = Go to SC 1.1                      NO    X__</div>	
	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	<b>Cat. 1</b>
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <div style="text-align: center;">YES = Category I                      NO = Category II</div> <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> 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 <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> ( <i>see p. 87</i> ) 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 question is used to screen out most sites before you need to contact WNHP/DNR.</i> ) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site X_____ YES X___ Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? <div style="text-align: center;">YES = Category 1                      NO X_____ not a Heritage Wetland</div>	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> ( <i>see p. 87</i> ) Does the wetland ( <b>or any part of the unit</b> ) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <b>If you answer yes you will still need to rate the wetland based on its function.</b> 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)? <div style="text-align: center;">YES = Category I                      NO = Is not a bog for purpose of rating</div>	<b>Cat. I</b>



SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X_____ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO X_____ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO X_____ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: Wetland P

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland P

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes X No \_\_\_\_\_ Date of training: 11/06\_\_\_\_\_

SEC: 12 TWNSHP: 27N RNGE: 1W Is S/T/R in Appendix D? Yes X-but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III \_\_\_\_\_ IV X

Category I = Score > 70	Score for Water Quality Functions	<b>5</b>
Category II = Score 51 - 69	Score for Hydrologic Functions	<b>2</b>
Category III = Score 30 – 50	Score for Habitat Functions	<b>16</b>
Category IV = Score < 30	TOTAL Score for Functions	<b>23</b>

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply X

**Final Category** (choose the “highest” category from above)

**IV**

**Summary of basic information about the wetland unit.**

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

Wetland name or number: Wetland 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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>	<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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. 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 than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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



<b>S Slope Wetlands</b>		<b>Points</b>
<b>WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.</b>		(only 1 score per box) (see p.64)
<b>S 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
	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% ..... <b>points = 2</b> • 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 (Use NRCS definitions). YES = 3 points NO = <b>0 points</b>	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. • Dense, uncut, herbaceous vegetation > 90% of the wetland area..... points = 6 • Dense, uncut, herbaceous vegetation > 1/2 of area ..... <b>points = 3</b> • 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 <b>Aerial photo or map with vegetation polygons</b>	<b>Figure</b> ____ <b>3</b>
<b>Total for S 1</b> Add the points in the boxes above		<b>5</b>
<b>S 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b>	(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. _____ 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 <b>NO multiplier is 1</b>	Multiplier <b>1</b>
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from S1 by S2; then add score to table on p. 1		<b>5</b>
<b>HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.</b>		
<b>S 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?</b>	(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, <b>rigid</b> vegetation covers > 90% of the area of the wetland ..... points = 6 • Dense, uncut, <b>rigid</b> vegetation > 1/2 area of wetland ..... points = 3 • Dense, uncut, <b>rigid</b> vegetation > 1/4 area..... <b>points = 1</b> • 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 = <b>0 points</b>	0
Add the points in the boxes above		<b>1</b>
<b>S 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b>	(see p. 70)
	Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. <b>X</b> 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) <b>YES multiplier is 2</b> NO multiplier is 1	Multiplier <b>2</b>
<b>◆ TOTAL – Hydrologic Functions</b> Multiply the score from S3 by S4; then add score to table on p. 1		<b>2</b>

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)																
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.																		
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>																	
H 1.1	<p><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.</p> <p><input type="checkbox"/> Aquatic Bed  <input checked="" type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)            If the unit has a forested class check if:  <input type="checkbox"/> 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:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>3 structures..... points = 2</td> <td></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	3 structures..... points = 2		2 structures..... points = 1	1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>										
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>																	
3 structures..... points = 2																		
2 structures..... points = 1	1 structure..... <b>points = 0</b>																	
H 1.2	<p><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).</p> <table border="0"> <tr> <td><input type="checkbox"/> Permanently flooded or inundated</td> <td>4 or more types present points = 3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Seasonally flooded or inundated</td> <td>3 or more types present..... points = 2</td> </tr> <tr> <td><input type="checkbox"/> Occasionally flooded or inundated</td> <td>2 types present..... points = 1</td> </tr> <tr> <td><input type="checkbox"/> Saturated only</td> <td>1 type present ..... <b>points = 0</b></td> </tr> <tr> <td><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</td> <td></td> </tr> <tr> <td><input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b></td> <td></td> </tr> <tr> <td><input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b></td> <td></td> </tr> </table> <p style="text-align: right;"><b>Map of hydroperiods</b></p>	<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3	<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 or more types present..... points = 2	<input type="checkbox"/> Occasionally flooded or inundated	2 types present..... points = 1	<input type="checkbox"/> Saturated only	1 type present ..... <b>points = 0</b>	<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland		<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		<input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b>		<input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b>		<p>Figure ____</p> <p><b>0</b></p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3																	
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 or more types present..... points = 2																	
<input type="checkbox"/> Occasionally flooded or inundated	2 types present..... points = 1																	
<input type="checkbox"/> Saturated only	1 type present ..... <b>points = 0</b>																	
<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland																		
<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland																		
<input type="checkbox"/> <b>Lake-fringe wetland..... = 2 points</b>																		
<input type="checkbox"/> <b>Freshwater tidal wetland..... = 2 points</b>																		
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species..... points = 2</td> </tr> <tr> <td>5 – 19 species..... <b>points = 1</b></td> </tr> <tr> <td>&lt; 5 species..... points = 0</td> </tr> </table> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	> 19 species..... points = 2	5 – 19 species..... <b>points = 1</b>	< 5 species..... points = 0	<p><b>1</b></p>													
> 19 species..... points = 2																		
5 – 19 species..... <b>points = 1</b>																		
< 5 species..... points = 0																		
H 1.4	<p><u>Interspersion of Habitats</u> (see p. 76): Decided from the diagrams below whether interspersions 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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>																
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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.</p>	<p><b>1</b></p>																
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>2</b>																

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	2
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	16



## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
SC1	<b>Estuarine wetlands?</b> (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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ____ 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.	Cat. I Cat. II Dual Rating I/II
SC2	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D ____ or accessed from WNHP/DNR web site X____ YES X__ Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO ____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1                      NO X____ not a Heritage Wetland	Cat I
SC3	<b>Bogs</b> (see p. 87) Does the wetland ( <b>or any part of the unit</b> ) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <b><i>If you answer yes you will still need to rate the wetland based on its function.</i></b> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	Cat. I

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X_____ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO X_____ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO X_____ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: Wetland Q (Lost Lake)

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland Q (Lost Lake)

Date of site visit: July 2, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 7 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☒ but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II X III \_\_\_\_\_ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**6**

Score for Hydrologic Functions

**24**

Score for Habitat Functions

**27**

TOTAL Score for Functions

**57**

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II \_\_\_\_\_ Does not apply X

**Final Category** (choose the “highest” category from above)

**II**

**Summary of basic information about the wetland unit.**

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	

Wetland name or number: Wetland Q (Lost Lake)

**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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>	<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... points = 5</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... <b>points = 3</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  3
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... points = 4</li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... <b>points = 0</b></li> </ul> <b>Map of Hydroperiods</b>	Figure ____  0
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		6
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	6
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... <b>points = 5</b></li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... points = 3</li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	5
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		12
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: Wetland Q (Lost Lake)

	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input checked="" type="checkbox"/> Other <u>adjacent manmade resources could be damaged by flooding</u>	
	YES multiplier is 2                      NO multiplier is 1	<u>2</u>
◆	<b>TOTAL – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	24

Comments:

These questions apply to wetlands of all HGM classes.		Points									
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		(only 1 score per box)									
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>										
H 1.1	<p><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.</p> <p><input checked="" type="checkbox"/> Aquatic Bed  <input checked="" type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)</p> <p>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:</p> <table border="0"> <tr> <td>4 structures or more.....</td> <td>points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>3 structures.....</td> <td>points = 2</td> <td></td> </tr> <tr> <td>2 structures.....</td> <td>points = 1</td> <td>1 structure ..... points = 0</td> </tr> </table>	4 structures or more.....	points = 4	<b>Map of Cowardin vegetation classes</b>	3 structures.....	points = 2		2 structures.....	points = 1	1 structure ..... points = 0	<p>Figure ____</p> <p><b>4</b></p>
4 structures or more.....	points = 4	<b>Map of Cowardin vegetation classes</b>									
3 structures.....	points = 2										
2 structures.....	points = 1	1 structure ..... points = 0									
H 1.2	<p><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).</p> <p><input checked="" type="checkbox"/> Permanently flooded or inundated  <input checked="" type="checkbox"/> Seasonally flooded or inundated  <input checked="" type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only</p> <p>_____ Permanently flowing stream or river in, or adjacent to, the wetland          _____ Seasonally flowing stream in, or adjacent to, the wetland          _____ <b>Lake-fringe wetland..... = 2 points</b>          _____ <b>Freshwater tidal wetland..... = 2 points</b></p> <p><b>Map of hydroperiods</b></p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present.....</td> <td>points = 2</td> </tr> <tr> <td>2 types present.....</td> <td>points = 1</td> </tr> <tr> <td>1 type present.....</td> <td>points = 0</td> </tr> </table>	4 or more types present	points = 3	3 or more types present.....	points = 2	2 types present.....	points = 1	1 type present.....	points = 0	<p>Figure ____</p> <p><b>2</b></p>	
4 or more types present	points = 3										
3 or more types present.....	points = 2										
2 types present.....	points = 1										
1 type present.....	points = 0										
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted:</p> <table border="0"> <tr> <td>&gt; 19 species .....</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> </tr> <tr> <td>&lt; 5 species .....</td> <td>points = 0</td> </tr> </table> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	> 19 species .....	points = 2	5 – 19 species.....	points = 1	< 5 species .....	points = 0	<p><b>1</b></p>			
> 19 species .....	points = 2										
5 – 19 species.....	points = 1										
< 5 species .....	points = 0										
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="margin-left: 10px;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> </div> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".</p> <p><b>Use map of Cowardin classes</b></p>	<p>Figure ____</p> <p><b>3</b></p>									
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 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 (&gt; 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)  <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p><b>3</b></p>									
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>13</b>									



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right; padding-right: 20px;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	13
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	27

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>  X  </u></div>	
	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	<b>Cat. 1</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <u>  X  </u> _____ YES <u>  X  </u> Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1                      NO <u>  X  </u> not a Heritage Wetland	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (see p. 87) Does the wetland ( <b>or any part of the unit</b> ) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



Wetland name or number: R

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland R

Date of site visit: October 30, 2013

Rated by: J. Dadisman Trained by Ecology? Yes X No \_\_\_\_\_ Date of training: 11/06\_\_\_\_\_

SEC: 19 TWNSHP: 27N RNGE: 1W Is S/T/R in Appendix D? Yes X-but not the NHP Wetland No

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III X IV \_\_\_\_\_

Category I = Score > 70	Score for Water Quality Functions	<b>14</b>
Category II = Score 51 - 69	Score for Hydrologic Functions	<b>8</b>
Category III = Score 30 – 50	Score for Habitat Functions	<b>23</b>
Category IV = Score < 30	TOTAL Score for Functions	<b>45</b>

Category based on SPECIAL CHARACTERISTICS of Wetland I \_\_\_\_\_ II X Does not apply \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**II**

**Summary of basic information about the wetland unit.**

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

Wetland name or number: R

**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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.			X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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.

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

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

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






<b>D Depressional and Flat Wetlands</b>		<b>Points</b>
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		(only 1 score per box) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 3</li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... <b>points = 2</b></li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not <i>permanently flowing</i> treat unit as “<i>intermittently flowing</i>”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  2
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO <b>points = 0</b>	0
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... points = 4</li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... <b>points = 0</b></li> </ul> <b>Map of Hydroperiods</b>	Figure ____  0
<b>Total for D 1</b> Add the points in the boxes above		7
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> _____ 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 <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland _____ Wetland is fed by groundwater high in phosphorus or nitrogen _____ Other _____ <b>YES multiplier is 2</b> NO multiplier is 1	Multiplier  2
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <b>add score to table on p. 1</b>		14
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... points = 4</li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... <b>points = 2</b></li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not <i>permanently flowing</i> treat unit as “<i>intermittently flowing</i>”)  <ul style="list-style-type: none"> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul> </li> </ul>	2
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... <b>points = 3</b></li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	3
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> Add the points in the boxes above		8
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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	Multiplier (see p. 49)



Wetland name or number: R

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

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>	
H 1.1	<p><b>Vegetation structure</b> (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.</p> <p><input checked="" type="checkbox"/> Aquatic Bed  <input checked="" type="checkbox"/> Emergent plants  <input type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input checked="" type="checkbox"/> Forested (areas where trees have &gt; 30% cover)  If the unit has a forested class check if:  <input checked="" type="checkbox"/> 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:</p> <p>4 structures or more ..... points = 4  3 structures ..... points = 2  2 structures ..... points = 1  1 structure ..... points = 0</p> <p><b>Map of Cowardin vegetation classes</b></p>	<p>Figure ____</p> <p><b>2</b></p>
H 1.2	<p><b>Hydroperiods</b> (see p.73):  Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).</p> <p><input checked="" type="checkbox"/> Permanently flooded or inundated  <input type="checkbox"/> Seasonally flooded or inundated  <input type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only  <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland  <input type="checkbox"/> Lake-fringe wetland ..... = 2 points  <input type="checkbox"/> Freshwater tidal wetland ..... = 2 points</p> <p><b>Map of hydroperiods</b></p>	<p>Figure ____</p> <p><b>2</b></p>
H 1.3	<p><b>Richness of Plant Species</b> (see p. 75):  Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold)  You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.  If you counted: &gt; 19 species ..... points = 2  5 – 19 species ..... points = 1  &lt; 5 species ..... points = 0</p> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>1</b></p>
H 1.4	<p><b>Interspersion of Habitats</b> (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.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".</p> <p><b>Use map of Cowardin classes</b></p>	<p>Figure ____</p> <p><b>2</b></p>
H 1.5	<p><b>Special Habitat Features</b> (see p. 77):  Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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.</p>	<p><b>3</b></p>
<b>H 1 TOTAL Score</b> – potential for providing habitat		<b>10</b>

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>2</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___X___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = 0 points</p> <p><i>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)</i></p>	1
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	13
	<p><i>TOTAL for H 1 from page 8</i></p>	10
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	23



# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? <input checked="" type="checkbox"/> The dominant water regime is tidal, <input checked="" type="checkbox"/> Vegetated, and <input checked="" type="checkbox"/> With a salinity greater than 0.5 ppt. <b>YES = Go to SC 1.1</b> <span style="margin-left: 100px;">NO _____</span>	
	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? <b>YES = Category I</b> <b>NO = go to SC 1.2</b>	<b>Cat. 1</b>
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <b>YES = Category I</b> <b>NO = Category II</b> <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> 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 <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <input checked="" type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> Contact WNHP/DNR (see p. 79) and go to SC 2.2 <b>NO</b> _____ 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? <b>YES = Category 1</b> <span style="margin-left: 100px;">NO <input checked="" type="checkbox"/> not a Heritage Wetland</span>	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <b>YES = go to question 3</b> <b>NO = go to question 2</b> 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? <b>YES = go to question 3</b> <b>NO = is not a bog for purpose of rating</b> 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)? <b>YES = Is a bog for purpose of rating</b> <b>NO = go to question 4</b> 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)? <b>YES = Category I</b> <span style="margin-left: 100px;">NO = Is not a bog for purpose of rating</span>	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>_____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>_____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X_____ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>_____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>_____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO X_____ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>_____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>_____ 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.</p> <p>_____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO X_____ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: W1

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland W1

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 6 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☒ No ☐

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**16**

Score for Hydrologic Functions

**10**

Score for Habitat Functions

**20**

TOTAL Score for Functions

**46**

Category based on SPECIAL CHARACTERISTICS of Wetland I ☒ II \_\_\_\_\_ Does not apply \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**I**

**Summary of basic information about the wetland unit.**

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

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

Wetland name or number: W1

**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.

<b>Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)</b>		<b>YES</b>	<b>NO</b>
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X	
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>			X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.			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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES <b>points = 4</b> NO points = 0	4
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		16
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
◆	<b>TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	16
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... <b>points = 3</b></li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	3
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		10
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: W1

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

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)						
<b>HABITAT FUNCTIONS</b> – Indicators that wetland functions to provide important habitat.								
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>							
H 1.1	<p><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.</p> <p> <input type="checkbox"/> Aquatic Bed  <input type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)            If the unit has a forested class check if:  <input type="checkbox"/> 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:         </p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>							
2 structures..... points = 1	3 structures..... points = 2							
	1 structure..... <b>points = 0</b>							
H 1.2	<p><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).</p> <p> <input checked="" type="checkbox"/> Permanently flooded or inundated  <input checked="" type="checkbox"/> Seasonally flooded or inundated  <input type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only  <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland  <input type="checkbox"/> Lake-fringe wetland..... = 2 points  <input type="checkbox"/> Freshwater tidal wetland..... = 2 points         </p> <p>If you counted: 4 or more types present points = 3 3 or more types present..... <b>points = 2</b> 2 types present..... points = 1 1 type present..... points = 0</p> <p><b>Map of hydroperiods</b></p>	<p>Figure ____</p> <p><b>2</b></p>						
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted: &gt; 19 species..... points = 2 5 – 19 species..... <b>points = 1</b> &lt; 5 species..... points = 0</p> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>1</b></p>						
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>						
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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.         </p>	<p><b>3</b></p>						
<b>H 1 TOTAL Score</b> – potential for providing habitat		<b>6</b>						



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	6
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	20

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
SC1	<b>Estuarine wetlands?</b> (see p.86) Does the wetland unit meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. YES = Go to SC 1.1                      NO <u>X</u>	
	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 <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> 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 <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Cat. I  Cat. II  Dual Rating I/II
SC2	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site X _____ YES X____ Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1                      NO _____ not a Heritage Wetland	Cat I
SC3	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? YES = Category I                      NO = Is not a bog for purpose of rating	Cat. I

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>____ 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.</p> <p>____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



Wetland name or number: W2

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland W2

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 6 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☒ No ☐

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**16**

Score for Hydrologic Functions

**10**

Score for Habitat Functions

**20**

TOTAL Score for Functions

**46**

Category based on SPECIAL CHARACTERISTICS of Wetland I ☒ II \_\_\_\_\_ Does not apply \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**I**

**Summary of basic information about the wetland unit.**

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

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

**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. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.	X	
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES <b>points = 4</b> NO points = 0	4
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		16
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>		16
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... <b>points = 3</b></li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	3
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		10
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: W2

	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> ____ 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	
◆	<b>TOTAL – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	10

Comments:

These questions apply to wetlands of all HGM classes.		Points						
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		(only 1 score per box)						
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>							
H 1.1	<p><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.</p> <p> <input type="checkbox"/> Aquatic Bed  <input type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)            If the unit has a forested class check if:  <input type="checkbox"/> 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:         </p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>							
2 structures..... points = 1	3 structures..... points = 2							
	1 structure..... <b>points = 0</b>							
H 1.2	<p><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).</p> <p> <input checked="" type="checkbox"/> Permanently flooded or inundated  <input checked="" type="checkbox"/> Seasonally flooded or inundated  <input type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only  <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland  <input type="checkbox"/> Lake-fringe wetland..... = 2 points  <input type="checkbox"/> Freshwater tidal wetland..... = 2 points         </p> <p>If you counted: 4 or more types present points = 3 3 or more types present..... <b>points = 2</b> 2 types present..... points = 1 1 type present..... points = 0</p> <p><b>Map of hydroperiods</b></p>	<p>Figure ____</p> <p><b>2</b></p>						
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted: &gt; 19 species..... points = 2 5 – 19 species..... <b>points = 1</b> &lt; 5 species..... points = 0</p> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>1</b></p>						
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>						
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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.         </p>	<p><b>3</b></p>						
<b>H 1 TOTAL Score – potential for providing habitat</b>		<b>6</b>						

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b></p> <p>If wetland has <b>2</b> priority habitats = <b>3 points</b></p> <p>If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	6
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	20



## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>  X  </u></div>	
	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	<b>Cat. 1</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <u>  X  </u> YES <u>  X  </u> Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? <div style="text-align: right;">YES = Category 1                      NO    _____ not a Heritage Wetland</div>	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? <div style="text-align: right;">YES = Category I                      NO = Is not a bog for purpose of rating</div>	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>____ 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.</p> <p>____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:

Wetland name or number: W3

**WETLAND RATING FORM – WESTERN WASHINGTON**  
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users  
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland W3

Date of site visit: July 25, 2013

Rated by: J. Dadisman Trained by Ecology? Yes ☒ No ☐ Date of training: 11/06

SEC: 6 TWNSHP: 27N RNGE: 1E Is S/T/R in Appendix D? Yes ☒ No ☐

Map of wetland unit: Figure \_\_\_\_\_ Estimated size \_\_\_\_\_

**SUMMARY OF RATING**

Category based on FUNCTIONS provided by wetland: I \_\_\_\_\_ II \_\_\_\_\_ III ☒ IV \_\_\_\_\_

Category I =	Score > 70
Category II =	Score 51 - 69
Category III =	Score 30 – 50
Category IV =	Score < 30

Score for Water Quality Functions

**16**

Score for Hydrologic Functions

**10**

Score for Habitat Functions

**20**

TOTAL Score for Functions

**46**

Category based on SPECIAL CHARACTERISTICS of Wetland I ☒ II \_\_\_\_\_ Does not apply \_\_\_\_\_

**Final Category** (choose the “highest” category from above)

**I**

**Summary of basic information about the wetland unit.**

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

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

**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. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered <b>animal or plant</b> species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.	X	
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered <b>animal</b> species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		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 called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. \_\_\_\_).*

2. The entire wetland unit is flat and precipitation is 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 the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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) (see p.38)
<b>D 1</b>	<b>Does the wetland have the <u>potential</u> to improve water quality?</b>	
D 1.1	Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 3</b></li> <li>Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 1</li> <li>Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) <b>Provide photo or drawing</b></li> </ul>	Figure ____  3
D 1.2	The soil 2 inches below the surface (or duff layer) is clay or organic ( <i>use NRCS definitions</i> ) YES <b>points = 4</b> NO points = 0	4
D 1.3	Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> <li>Wetland has persistent, ungrazed vegetation &gt; = 95% of area..... <b>points = 5</b></li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/2 of area..... points = 3</li> <li>Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area..... points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt; 1/10 of area..... points = 0</li> </ul> <b>Map of Cowardin vegetation classes</b>	Figure ____  5
D 1.4	Characteristics of seasonal ponding or inundation: <i>This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <ul style="list-style-type: none"> <li>Area seasonally ponded is &gt; 1/2 total area of wetland ..... <b>points = 4</b></li> <li>Area seasonally ponded is &gt; 1/4 total area of wetland ..... points = 2</li> <li>Area seasonally ponded is &lt; 1/4 total area of wetland ..... points = 0</li> </ul> <b>Map of Hydroperiods</b>	Figure ____  4
<b>Total for D 1</b> <i>Add the points in the boxes above</i>		16
<b>D 2</b>	<b>Does the wetland have the <u>opportunity</u> to improve water quality?</b> 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 may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grazing in the wetland or within 150 ft</li> <li><input type="checkbox"/> Untreated stormwater discharges to wetland</li> <li><input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland</li> <li><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li><input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland</li> <li><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li><input type="checkbox"/> Other _____</li> </ul> YES multiplier is 2 <b>NO multiplier is 1</b>	(see p. 44)          Multiplier  1
<b>◆ TOTAL – Water Quality Functions</b> Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>		16
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		
<b>D 3</b>	<b>Does the wetland have the <u>potential</u> to reduce flooding and erosion?</b>	(see p.46)
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> <li>Unit is a depression with no surface water leaving it (no outlet)..... <b>points = 4</b></li> <li>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2</li> <li>Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow <b>and no obvious natural outlet</b> and/or outlet is a man-made ditch..... points = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”)</li> <li>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) ..... points = 0</li> </ul>	4
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> <li>Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7</li> <li>The wetland is a “headwater” wetland..... points = 5</li> <li>Marks of ponding between 2 ft. to &lt; 3 ft. from surface or bottom of outlet..... points = 5</li> <li>Marks are at least 0.5 ft. to &lt; 2 ft. from surface or bottom of outlet..... <b>points = 3</b></li> <li>Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1</li> <li>Marks of ponding less than 0.5 ft..... points = 0</li> </ul>	3
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <li>The area of the basin is less than 10 times the area of unit ..... points = 5</li> <li>The area of the basin is 10 to 100 times the area of the unit ..... <b>points = 3</b></li> <li>The area of the basin is more than 100 times the area of the unit..... points = 0</li> <li>Entire unit is in the FLATS class ..... points = 5</li> </ul>	3
<b>Total for D 3</b> <i>Add the points in the boxes above</i>		10
<b>D 4</b>	<b>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> 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: W3

	groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> ____ 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	
◆	<b>TOTAL – Hydrologic Functions</b> Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	10

Comments:

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)						
<b>HABITAT FUNCTIONS</b> – Indicators that wetland functions to provide important habitat.								
<b>H 1</b>	<b>Does the wetland have the <u>potential</u> to provide habitat for many species?</b>							
H 1.1	<p><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.</p> <p> <input type="checkbox"/> Aquatic Bed  <input type="checkbox"/> Emergent plants  <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have &gt; 30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt; 30% cover)            If the unit has a forested class check if:  <input type="checkbox"/> 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:         </p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><b>Map of Cowardin vegetation classes</b></td> </tr> <tr> <td>2 structures..... points = 1</td> <td>3 structures..... points = 2</td> </tr> <tr> <td></td> <td>1 structure..... <b>points = 0</b></td> </tr> </table>	4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>	2 structures..... points = 1	3 structures..... points = 2		1 structure..... <b>points = 0</b>	<p>Figure ____</p> <p><b>0</b></p>
4 structures or more..... points = 4	<b>Map of Cowardin vegetation classes</b>							
2 structures..... points = 1	3 structures..... points = 2							
	1 structure..... <b>points = 0</b>							
H 1.2	<p><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).</p> <p> <input checked="" type="checkbox"/> Permanently flooded or inundated  <input checked="" type="checkbox"/> Seasonally flooded or inundated  <input type="checkbox"/> Occasionally flooded or inundated  <input checked="" type="checkbox"/> Saturated only  <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland  <input type="checkbox"/> Lake-fringe wetland..... = 2 points  <input type="checkbox"/> Freshwater tidal wetland..... = 2 points         </p> <p>If you counted: 4 or more types present points = 3 3 or more types present..... <b>points = 2</b> 2 types present..... points = 1 1 type present..... points = 0</p> <p><b>Map of hydroperiods</b></p>	<p>Figure ____</p> <p><b>2</b></p>						
H 1.3	<p><u>Richness of Plant Species</u> (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup> (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.</p> <p>If you counted: &gt; 19 species..... points = 2 5 – 19 species..... <b>points = 1</b> &lt; 5 species..... points = 0</p> <p>List species below if you want to:</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>1</b></p>						
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>None = 0 points    Low = 1 point    Moderate = 2 points</p> <p>High = 3 points    [riparian braided channels]</p> </div> <div style="flex: 1; padding-left: 20px;"> <p>Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always “high”.</p> <p><b>Use map of Cowardin classes</b></p> </div> </div>	<p>Figure ____</p> <p><b>0</b></p>						
H 1.5	<p><u>Special Habitat Features</u> (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in. diameter and 6 ft. long)  <input checked="" type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 inches) in the wetland  <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  <input type="checkbox"/> 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)  <input checked="" type="checkbox"/> 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.         </p>	<p><b>3</b></p>						
<b>H 1 TOTAL Score</b> – potential for providing habitat		<b>6</b>						



H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80):  <i>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".</i></p> <p>X <u>100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water</u>            &gt; 95% of circumference. No structures are within the undisturbed part of buffer            (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... <b>points = 5</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 50% circumference..... <b>points = 4</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 95% circumference..... <b>points = 4</b></p> <p>_____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            &gt; 25% circumference..... <b>points = 3</b></p> <p>_____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water            for &gt; 50% circumference..... <b>points = 3</b></p> <p><b>If buffer does not meet any of the criteria above:</b></p> <p>_____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland &gt;            95% circumference. Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ No paved areas of buildings within 50m of wetland for &gt; 50% circumference.            Light to moderate grazing or lawns are OK..... <b>points = 2</b></p> <p>_____ Heavy grazing in buffer..... <b>points = 1</b></p> <p>_____ Vegetated buffers are &lt; 2m wide (6.6 ft) for more than 95% circumference            (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... <b>points = 0</b></p> <p>_____ Buffer does not meet any of the criteria above..... <b>points = 1</b></p> <p style="text-align: right;"><b>Arial photo showing buffers</b></p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em;"><b>5</b></p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="padding-left: 40px;">YES = <b>4 points</b> (go to H 2.3)                      NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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? <b>OR a Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;">YES = <b>2 points</b> (go to H 2.3)                      NO = go to H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> <li>• Within 5 mi (8km) of a brackish or salt water estuary OR</li> <li>• Within 3 miles of a large field or pasture (&gt; 40 acres) OR</li> <li>• Within 1 mile of a lake greater than 20 acres?</li> </ul> <p style="text-align: right;">YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;"><b>4</b></p>

Comments:

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <a href="http://wdfw.wa.gov/hab/phslist.htm">http://wdfw.wa.gov/hab/phslist.htm</a></i> )</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p>___ <b>Aspen Stands:</b> Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p>___ <b>Biodiversity Areas and Corridors:</b> 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>).</p> <p>___ <b>Herbaceous Balds:</b> Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p>___ <b>Old-growth/Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) &gt; 81 cm (32 in) dbh or &gt; 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p>___ <b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p>___ <b>Riparian:</b> The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ <b>Westside Prairies:</b> Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p>___ <b>Instream:</b> The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p>___ <b>Nearshore:</b> Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p>___ <b>Caves:</b> 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.</p> <p>___ <b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p>___ <b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ <b>Snags and Logs:</b> 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 &gt; 51 cm (20 in) in western Washington and are &gt; 2 m (6.5 ft) in height. Priority logs are &gt; 30 cm (12 in) in diameter at the largest end, and &gt; 6 m (20 ft) long.</p> <p>If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>          If wetland has <b>2</b> priority habitats = <b>3 points</b>          If wetland has <b>1</b> priority habitat = <b>1 point</b> No habitats = <b>0 points</b></p> <p><i>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)</i></p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> Choose the <b>one</b> description of the landscape around the wetland that best fits (<i>see p. 84</i>)</p> <ul style="list-style-type: none"> <li>• 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 development..... <b>points = 5</b></li> <li>• 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</li> <li>• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. ....points = 3</li> <li>• The wetland fringe on a lake <b>with</b> disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3</li> <li>• There is at least 1 wetland within 1/2 mile .....points = 2</li> <li>• There are no wetlands within 1/2 mile.....points = 0</li> </ul>	5
	<p><b>H 2 TOTAL Score</b> – opportunity for providing habitat      <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	14
	<p><i>TOTAL for H 1 from page 8</i></p>	6
◆	<p><b>Total Score for Habitat Functions</b>      <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	20

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

<b>Wetland Type</b> – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
<b>SC1</b>	<b>Estuarine wetlands?</b> (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. <div style="text-align: right;">YES = Go to SC 1.1                      NO    <u>  X  </u></div>	
	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	<b>Cat. 1</b>
	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 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. ___ 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.	<b>Cat. I</b>  <b>Cat. II</b>  <b>Dual Rating I/II</b>
<b>SC2</b>	<b>Natural Heritage Wetlands</b> (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site <u>  X  </u> YES <u>  X  </u> Contact WNHP/DNR (see p. 79) and go to SC 2.2                      NO _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? <div style="text-align: right;">YES = Category 1                      NO    _____ not a Heritage Wetland</div>	<b>Cat I</b>
<b>SC3</b>	<b>Bogs</b> (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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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 <b>NO = go to question 2</b> 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 <b>NO = is not a bog for purpose of rating</b> 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)? <div style="text-align: right;">YES = Category I                      NO = Is not a bog for purpose of rating</div>	<b>Cat. I</b>

SC4	<p><b>Forested Wetlands</b> (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>____ <b>Old-growth forests:</b> (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).</p> <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <p>____ <b>Mature forests:</b> (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.</p> <p>YES = Category I                      NO = X__ not a forested wetland with special characteristics</p>	Cat. I
SC5	<p><b>Wetlands in Coastal Lagoons</b> (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p>____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p>____ The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p>YES = Go to SC 5.1                      NO    X__ not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p>____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p>____ 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.</p> <p>____ The wetland is larger than 1/10 acre (4350 square ft.)</p> <p>YES = Category I                      NO = Category II</p>	Cat. I Cat. II
SC6	<p><b>Interdunal Wetlands</b> (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES = Go to SC 6.1                      NO    X__ not an interdunal wetland for rating</p> <p><b><i>If you answer yes you will still need to rate the wetland based on its functions.</i></b></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <li>• Long Beach Peninsula -- lands west of SR 103</li> <li>• Grayland-Westport -- lands west of SR 105</li> <li>• Ocean Shores-Copalis – lands west of SR 115 and SR 109</li> </ul> <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II                      NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p>	Cat. II Cat. III
◆	<p><b>Category of wetland based on Special Characteristics</b></p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	

Comments:



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