



# WETLAND FEASIBILITY REPORT

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## **Port Gamble Trail Feasibility** *Port Gamble, Washington*

Prepared for

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## SIGNATURE PAGE

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



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## **INTRODUCTION**

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Ecological Land Services, Inc. (ELS) is part of the consulting team with Fischer Bouma Partnership (FBP) and Map Limited, Inc. (Map) that was contracted by Kitsap County Department of Public Works (KCPW) to conduct a feasibility report for the Port Gamble Trail between the Town of Port Gamble and Stottlemeyer Road NE in North Kitsap County. The trail is proposed by KCPW and Olympic Property Group (OPG) and crosses both County and OPG property. The project covers approximately 6 miles in Sections 7, 13, 18, 19, 24, 25, 30, 31, and 36, Township 27 North, Ranges 1 and 2 East of the Willamette Meridian, in the Port Gamble area of Kitsap County, Washington (Figure 1). This feasibility report summarizes findings of the wetland delineation conducted along the path in accordance with the *Kitsap County Code (KCC), Chapter 19.200 Wetlands* and for delineation methodology, wetland categorization, and mitigation requirements. It also provides estimates for wetland and buffer mitigation areas and costs.

## **METHODOLOGY**

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The wetland delineation followed the Routine Determination Method according to the U.S. Army Corps of Engineers, *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0* (U.S. Army Engineer Research and Development Center, 2010).

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

Kitsap County and OPG jointly identified the initial route across the park and forestland between Stottlemeyer Road and the Town of Port Gamble. The trail route was walked by ELS biologists to identify the presence of wetlands across or near the proposed trail route from south to north. The wetlands were delineated where they crossed the original route or were in proximity to the trail. As a result of early identification visits, the trail route was realigned to avoid steep slopes and minimize wetland impacts, which necessitated additional site visits to identify wetlands along alternate trail route. The final route is based on the combined decision of Kitsap County and OPG based on recommendations made by the Fischer Bouma team. In general, the final route decision was based on presence of steep slopes along the existing roads that exceed the maximum slope percentages allowed by federal trail standards. The delineated wetland boundaries were located using a hand-held Trimble Global Positioning System unit (GPS) to provide a general location of the wetlands and their boundaries along or adjacent to the trail alignment. The delineation of the

wetland boundaries was determined through breaks in topography, changes in vegetation, and presence of hydrologic indicators. Vegetation, hydrology, and soil data was collected at 29 test plots to verify the wetland boundary mapping and data forms are not included with this report. A general discussion of the data collected in the wetland and upland areas is included. The mapped wetland boundaries are shown on Figures 2 through 4. In addition, ELS biologists identified and mapped culvert crossings along the existing roads in order to determine potential wetland and stream impacts.

## **STUDY AREA DESCRIPTION**

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The trail route examined in this feasibility study is part of a greater effort to connect regions of Kitsap County with non-motorized trails and for the continuation of the Sound to Olympics Trail. The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end (Figure 2). It passes primarily through the Port Gamble Heritage Park and undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices. OPG has a past policy of allowing public access to their timberlands that are not being actively logged. As a result, a large system of trails utilized by walkers, bikers, and equestrians will utilize existing logging road and well used paths. Only short segments of the proposed trail will be entirely new. Two potential options were identified by the work group. The Lower Option parallels State Highway 104 and is lower in the watershed than the Upper Option, which primarily follows the ridge. As a result, the Lower Option has greater topographical and critical areas challenges. The Upper Option is west of the Lower Option and occurs along the boundary of several watersheds. The Upper Option represents relatively level topography and fewer critical areas challenges. The length of the proposed trail and the conditions observed during field assessments necessitated dividing the project into three segments defined by regional proximity. The segments are described separately with regard to their position along the trail route, the critical areas observed, and vegetative conditions. In an effort to create trail complexity, two potential connections between the two options were also investigated. Both potential trail options are proposed to begin along State Highway 104 in Port Gamble. The segments are described from north to south beginning at South Teekalet Avenue and ending at the trailhead on the north side of Stottlemeyer Road in Poulsbo (Figures 3 through 5).

### **NORTH SEGMENT**

The north segment begins at the town of Port Gamble and extends south for about a mile and half (Figure 3). This area is composed of undulating terrain from the low north end to the high ridge at the south end. This segment is composed of a relatively level upland forest ridge and logging schedules have left most of the areas vegetated with mature stands of Douglas fir (Photoplates 1 through 3). Wetlands are absent along most of the Upper Option, but there are several well-established beaver pond wetlands at the north end. These wetlands were delineated by consultants for OPG prior to initiation of the feasibility. The boundaries as provided by OPG are provided on the ELS figures. Many culverts convey surface water beneath the logging roads that makes up the Upper Option. The trail follows the ridge's high topography southward into the next segment. The Lower Option passes by many wetland systems as well as stream culverts (Photoplates 1 through 3). Wetlands A through H are all sloping systems located along either side of the Lower Option. A

connecting trail along existing logging roads between the Lower to Upper Option is proposed in this segment to allow a combination of the options to be used and optimization of the final alignment. Several culverts cross the proposed connection, but no wetlands were located.

### **CENTRAL SEGMENT**

The central segment begins south of the connecting trail and continues south for about a mile and half. The area is characterized by very level terrain on the Upper Option, and highly variable topography along the Lower Option (Figure 4). Several ravines carve deep into the slope perpendicular to the trail, creating topographical and critical areas challenges. Selective logging and thinning was being conducted in the northern portion of the Lower Option during several of the field visits. Some areas of this segment are very dense with tree cover and are staged for commercial thinning. A second potential connecting trail was investigated in this segment to connect the Upper and Lower Options. The connecting trail would be completely new trail to accommodate the grade requirements, and four wetlands were found in the vicinity of the proposed trail. Wetlands M, N, O and P are depressional forested wetlands and their buffers would potentially have been impacted by the new trail (Photoplate 4), so the potential connection was abandoned in favor of the existing trail in the North Segment. Wetlands K and L are located on either side of the Upper Option just north of forest road 1000, which is oriented west to east (Photoplates 5).

### **SOUTH SEGMENT**

On the Lower Option, the south segment begins on a trail a couple hundred feet south of the Service Roads 1000 and 1200 intersection (Figure 5). This section of trail is generally at a grade steeper than 5%, and is crossed by several streams (Photoplate 6). Wetlands I and J are located adjacent to the trail in this segment. The Lower Option continues south on both existing roads and trails to Stottlemeyer Road. The south segment of the Upper Option starts on Service Road 1800 a couple hundred feet south of Service Roads 1700 and 1800 intersection. The Upper Option continues south on Service Road 1800 until the road turns east. In the southern end of the Upper Option's South Segment, there are numerous existing trails that extend south from Service Road 1800 that could provide access to the Stottlemeyer Road NE Trailhead. No wetlands were found on the south segment of the Upper Option, and one stream was mapped in the area (Photoplates 7 and 8)

## **VEGETATION**

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The areas of wetland identified along the trail alignment consisted of forested vegetation communities. The most common plant species in the wetlands include: red alder (*Alnus rubra*, FAC), salmonberry (*Rubus spectabilis*, FAC), youth-on-age (*Tolmeia menziesii*, FAC), lady fern (*Athyrium cyclosorum*, FAC), water parsley (*Oenanthe sarmentosa*, OBL), stinging nettle (*Urtica dioica*, FAC), red canarygrass (*Phalaris arundinacea*, FACW), slough sedge (*Carex obnupta*, OBL), soft rush (*Juncus effusus*, FACW), and creeping buttercup (*Ranunculus repens*, FAC).

The majority of the study area is maintained as timberland planted with Douglas fir (*Pseudotsuga menziesii*, FACU) and western red cedar (*Thuja plicata*, FAC), additional plant species include: red alder, salmonberry, red elderberry (*Sambucus racemosa*, FACU), snowberry (*Symphoricarpos*

*albus*, FACU), English holly (*Ilex aquilinum*, FACU), salal (*Gaultheria shallon*, FACU), trailing blackberry (*Rubus ursinus*, FACU), sword fern, and youth-on-age, common horsetail (*Equisetum arvense*, FAC), velvet grass (*Holcus lanatus*, FAC), lady fern, reed canarygrass, and hedge nettle (*Stachys chamissonis* spp. *cooleyae*, FAC).

The dominant vegetation found onsite is recorded on the attached wetland determination data forms (Appendix A). The indicator status, following the common and scientific names, indicates how likely a species is to be found in wetlands. Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) – Almost always occur in wetlands.
- **FACW** (facultative wetland) – Usually occur in wetlands, but may occur in non-wetlands.
- **FAC** (facultative) – Occur in wetlands and non-wetlands.
- **FACU** (facultative upland) – Usually occur in non-wetlands, but may occur in wetlands.
- **UPL** (obligate upland) – Almost never occur in wetlands.
- **NI** (no indicator) – Status not yet determined.

## **SOILS**

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As referenced on the U.S.D.A. Natural Resources Conservation Service (NRCS 2015) website, the following soil types are mapped (Table 1) along the preferred trail alignment (Figure 6). Of the mapped soil units, McKenna soils is the only soil that is classified as hydric and the other soil types mapped along the trail are not classified as hydric, although many have hydric inclusions (NRCS 2017). Areas mapped as hydric soil do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic vegetation, and hydric soils must all be present to classify an area as a wetland. Table 1 provides the list of soil types found within each segment along the preferred alignment of the trail and identifies whether they are considered hydric soil types.

**Table 1: Soil Map Units**

<b>Soil Map Units</b>	<b>Hydric?</b>
22 Kapowsin gravelly ashy loam, 0 to 6% slopes	No
23 Kapowsin gravelly ashy loam, 6 to 15% slopes	No
32 McKenna gravelly loam	Yes
39 Poulsbo gravelly sandy loam, 0 to 6% slopes	Inclusions
40 Poulsbo gravelly sandy loam, 6 to 15% slopes	Inclusions
41 Poulsbo gravelly sandy loam, 15 to 30% slopes	No
42 Poulsbo-Ragnar complex, 0 to 6% slopes	Inclusions
43 Poulsbo-Ragnar complex, 6 to 15% slopes	Inclusions
44 Ragnar fine sandy loam, 0 to 6% slopes	No
45 Ragnar fine sandy loam, 6 to 15% slopes	No
46 Ragnar fine sandy loam, 15 to 30 % slopes	No
59 Sinclair very gravelly sandy loam, 2 to 8% slopes	Inclusions
60 Sinclair very gravelly sandy loam, 8 to 15% slopes	Inclusions



The field visits revealed that the soil map units do not accurately reflect wetland and upland conditions along the preferred trail alignment. Hydric mineral soils (low matrix chromas with redoximorphic features) were identified in the wetlands in areas where hydric soils were not mapped. Wetlands A and C through P were identified and delineated in non-hydric soil map units and Wetland B was identified within the McKenna map unit. The soil test holes conducted in these wetlands revealed low matrix chroma, mineral soil conditions. These soil map units are well drained and do not have hydric soil inclusions, however, they either have depressions or form shallow sloping troughs where wetlands can develop as a result of groundwater discharging from the sloping terrain. Upland test plots revealed high soil matrix colors with no indicators of hydric soils present.

## **HYDROLOGY**

Hydrology was present in the delineated wetland areas during each of the late winter and early-spring field visits. A high water table was observed in many of the wetland test holes. Saturated soil conditions were also observed across many of the segments. Permanently flooded, seasonally flooded, or saturated only areas and seasonally flowing streams were observed in wetland areas identified in the trail segments. The sources of hydrology include seepage from slopes (Wetlands A-J), seasonally perched water tables (Wetlands B, K-P), surface water runoff (all wetlands), and stream flooding (areas of Wetland B). Direct precipitation also contributes water to all the wetlands.

## **NATIONAL WETLAND INVENTORY**

The National Wetlands Inventory (NWI) maps the presence of two palustrine, scrub shrub seasonally flooded wetlands (PSSC) in the North segment, in the vicinity of the preferred alignment (Figure 7). Wetland B was located in this area and was found to be larger than the mapped wetland and is primarily forested. No wetlands were mapped on or within 300 feet of the preferred alignment in the Central and South Segments. The ELS delineation does not agree with the NWI mapping because additional wetlands were identified and delineated in all three segments (Figure 2). The NWI maps should be used with discretion because they are used to gather general wetland information about a regional area and therefore are limited in accuracy for smaller areas because of their large scale.

## **KITSAP COUNTY CRITICAL AREAS**

The Kitsap County Critical Areas map (KC 2017) identifies wetland in the same orientation as the NWI and identifies potential wetlands in the same orientation as the NRCS (Figure 8). The ELS delineation revealed wetlands along each of the trail segments that are not mapped.

## **CONCLUSIONS**

### **WETLAND CATEGORIZATION**

The wetlands identified and delineated along the trail alignment were categorized according to *Washington State Wetlands Rating System for Western Washington, -2014 Update* (Rating System)

(Hruby 2014). The wetlands were rated using separate rating forms to determine the appropriate category (Appendix B) and the ratings are summarized in Table 2.

**Table 2: Wetland Ratings**

Wetland Class	HGM Class	Vegetation Class	2014 Wetland Rating System				Wetland Category
			Water Quality	Hydrologic	Habitat	Total	
<b>A</b>	Slope	Forested	5	4	5	14	IV
<b>B</b>	Depressional	Forested w/ 3 layers	6	6	6	18	III
<b>C</b>	Slope	Forested w/ 3 layers	5	4	5	14	IV
<b>D</b>	Slope	Forested w/ 3 layers	5	4	5	14	IV
<b>E</b>	Slope	Forested w/ 3 layers	5	4	5	14	IV
<b>F</b>	Slope	Forested w/ 3 layers	5	4	5	14	IV
<b>G</b>	Slope	Forested	6	4	5	15	IV
<b>H</b>	Slope	Forested	5	4	5	14	IV
<b>I</b>	Slope	Forested	5	4	5	14	IV
<b>J</b>	Slope	Forested w/ 3 layers	5	4	5	14	IV
<b>K</b>	Depressional	Forested w/ 3 layers	6	5	4	15	IV
<b>L</b>	Depressional	Forested w/ 3 layers	6	5	4	15	IV
<b>M</b>	Depressional	Forested w/ 3 layers	5	6	4	15	IV
<b>N</b>	Depressional	Forested	5	6	4	15	IV
<b>O</b>	Depressional	Forested	5	6	4	15	IV
<b>P</b>	Depressional	Forested	5	6	4	15	IV

**CRITICAL AREA REGULATIONS**

The *KCC Chapter 19.200* specifies buffers based on wetland category, scores for habitat functions on the rating form, and the intensity of the proposed land uses in accordance with the 2014 wetland rating system. High intensity land use buffer are assigned to this project because the trail will be paved and will have high use by local residents. Required buffers are summarized in Table 3.

**Table 3: Wetland Buffers**

<b>Wetlands</b>	<b>Category</b>	<b>Habitat Value Score</b>	<b>Buffer Width (feet)</b>
B	III	5/6 (moderate)	150
A,C-J	IV	5/6 (moderate)	50
K-P	IV	4 (low)	25

The *KCC Chapter 19.300* specifies buffers for streams based on the Washington Department of Natural Resources (DNR) Water Typing System. The stream flowing through culvert number 27 in the South Segment of the study area is not mapped or typed by the DNR’s Forest Practices Map, but meets the criteria of a fish-bearing (Type F) stream; the stream has an average bank full width of greater than 36 inches and grade less than 16% (Photoplates 7 and 8). Type F streams require a buffer of 150 feet and building or impervious surface setback of 15 feet.

## **FEASIBILITY DISCUSSION**

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### **PREFERRED ALIGNMENT AND CONSTRUCTION METHODS**

The preferred trail alignment begins at State Highway 104 in Port Gamble, and runs south along the Lower Option. The alignment then follows the northern connecting trail to transition to the Upper Option, and then continues south on the Upper Option until Service Road 1800 turns east. Here, to accommodate grade requirements, the alignment leaves the existing road and trail system and cuts southeast, crossing several existing trails before continuing east and ending at Stottlemeyer Road (Figure 5). The trail will be 10 to 14 feet wide and use the existing road base where possible. The active trail area will be constructed of asphalt paving to accommodate pedestrians and bicyclists.

The final trail alignment and widths were determined during the early phases of the feasibility process based on the federal requirements for multi-use trails and the physical constraints identified along the alignment. The physical constraints include steep slopes where the trail width and features required alteration because these sections could not meet the federal slope requirements and identification of wetlands in certain segments of the trail project. Although the preferred alignment has been identified and presented in the feasibility report, the final alignment may vary if significant trees and other vegetation are identified. The trail will only be revised if the new route can avoid or minimize impact to the wetland and significant vegetation.

### **IMPACT ASSESSMENT**

No wetland fill is proposed for this project. The potential impacts and mitigation measures focus on the construction methods and potential direct wetland, streams, and buffer impacts for which permits are required from the local, state, and federal agencies. No indirect impacts are discussed in this feasibility report but may be included in future mitigation reports and permit documents.

### **Potential Wetland and Buffer Impacts and Mitigation Measures**

In general, there will be no direct impacts to wetlands because the preferred alignment lies along existing roads used for maintenance and logging operations by OPG. The configuration results in

minimal impacts to the identified wetland areas but in some areas will result in temporary vegetation impacts in buffers to accommodate construction in the 10 to 14 foot wide work areas.

Buffer impacts will result from construction of the paved surfaces and removal of vegetation where they extend beyond the existing roadways. However, in some instances, the route is composed of existing roads that lay within the buffers so represents an existing interruption of the buffer and mitigation will not be required unless the construction activities result in additional buffer impacts.

The paved surfaces will also introduce runoff issues into the wetland buffer areas, which could alter the route of water in some areas and result in less discharge of groundwater in others. One area of concern is in the Central Segment of the Upper Option, between Wetlands K and L, where water currently floods over the existing road between the two wetlands. Here, a culvert will need to be placed under the trail to allow the continuation of water flow. Stormwater features constructed along the trail will prevent potential adverse impacts to water quality and quantity on the wetland areas. Permanent vegetation removal will reduce the protection for the wetland areas but once the trail is constructed, areas of the buffer outside the trail area can be enhanced to compensate for the permanent loss of vegetation. The proposed temporary vegetation impact areas will be mitigated once construction is completed. Mitigation measures will include removal of invasive plant species and replanting with native buffer species in the wetland and buffer areas along the trail.

### **Potential Stream and Buffer Impacts and Mitigation Measures**

For most of the alignment there will be no direct impacts to streams or their buffers because the proposed route lies along existing roads used for maintenance and logging operations by OPG. Twenty-seven culverts currently exist along the preferred alignment and new culverts will be installed where needed to allow the continuation of water flow. The culverts observed during the field assessment appear to have been recently replaced and are at least 18 inches in diameter with some culverts 24 inches in diameter where larger flows of water along existing streams are present. Based on these observations, the culverts will likely not require full replacement unless deemed necessary by the local tribes and WDFW.

One new stream crossing is proposed in the South Segment, where the preferred alignment leaves Service Road 1800 and continues southeast (Figure ). Stream and buffer impacts will result from construction of a new crossing and removal of vegetation. An alternative, to avoid and minimize stream impacts, is to reroute the alignment further east to follow Service Road 1800 where there is culvert under the road. This will greatly reduce the impact to the stream and its buffers and reduce permitting and mitigation costs.

The paved surfaces will also introduce runoff issues into the stream buffer areas, which could alter the route of water in some areas and result in less discharge of groundwater in others. Stormwater features constructed along the trail will prevent potential adverse impacts to water quality and quantity on the stream. Permanent vegetation removal will reduce the protection for the stream but once the trail is constructed, areas of the buffer outside the trail area can be enhanced to compensate for the permanent loss of vegetation. The proposed temporary vegetation impact areas will be restored to replace plants once construction is completed. Mitigation measures will include removal of invasive plant species and replanting with native buffer species in the stream and buffer areas along the trail.

## **Mitigation Options and Cost Overview**

This trail project has selected an alignment that basically avoids most impacts to the identified critical areas and buffers because it utilizes the existing road and trail system on the OPG and Port Gamble Heritage Park properties. Since there will be no loss of acreage or function to the wetlands along the preferred alignment, mitigation will focus mostly on compensation for permanent and temporary vegetation removal within both wetland and buffer areas, as needed. The method of compensation for permanent wetland and buffer vegetation impacts will likely be enhancement of wetlands and buffers. In areas where vegetation removal is temporary, the replanting plan will simply restore vegetation in areas that will remain wetland or buffer. Permanent wetland vegetation impacts will be mitigated at the appropriate enhancement ratios for the different wetland categories, which are: Category I - 24:1, Category II - 12:1, Category II - 8:1, and Category IV - 6:1. Permanent buffer impacts are mitigated at a 1:1 ratio. Restoration of wetland and buffer areas where temporary vegetation impacts occur will be at the 1:1 ratio required for buffer impacts. Onsite mitigation is proposed around the existing wetlands where there is invasive plant cover and where disturbance of vegetation has occurred previously.

Enhancement and restoration of vegetation impacts typically has the lowest costs for mitigation because it involves installation of plants in wetland and buffer areas and does not require grading/excavation costs associated with the creation, reestablishment, and rehabilitation mitigation options. The overall cost depends on the number of plants needed to enhance and restore the vegetation areas, which is dependent on the acreage of impact and the mitigation area available for enhancement. Based on the areas of impact and the mitigation ratios, the approximate costs for wetland enhancement will range between \$325,000 and \$350,000 and between \$12,000 and \$15,000 for buffer mitigation. The estimates provided represent the worst case with regard to mitigation ratio, mitigation area required, and the approximate costs for enhancement of wetlands as mitigation, which is based on the cost per plant and installation by professional landscapers. The overall costs for mitigation could change based on final trail alignment, mitigation approach, and plant costs. The costs also assume that enhancement will take place along the trail and in the impacted wetlands once construction is completed.

## **REGULATORY AGENCIES WETLAND AND BUFFER PERMITS**

The permits needed for construction of the trail through wetlands and buffers vary depending on the level of impact on the wetlands, streams and buffers. Wetland impacts are regulated by the U.S. Army Corps of Engineers (Corps), Washington Department of Ecology (Ecology), and Kitsap County, when proposing filling, ditching, and/or dredging. Hydraulic Project Approvals (HPA) will be required from the Washington Department of Fish and Wildlife for stream crossings that require installation of culverts. Wetland impacts are mitigated to achieve a no net loss of wetland acreage and/or function to compensate for the loss of acreage and function in the impacted wetland. Buffer impacts do not result in direct impacts to wetland areas so are usually regulated only by local agencies.

- **Kitsap County**-Impacts to wetlands and buffers are regulated by Kitsap County and require submittal of Site Development Activity Permit (SDAP). A State Environmental Policy Act (SEPA) checklist must be submitted along with the SDAP permit package. Wetland delineation and wetland/buffer mitigation plan reports are required as part of the SDAP

permit. No individual critical area or wetland permits are required by Kitsap County. Mitigation for wetland impacts are varied and depend on the category of wetland and the method of mitigation (creation/reestablishment, rehabilitation, and/or enhancement). The lowest ratio for mitigation is 1.5:1 for wetland impacts to Category IV wetlands and the highest are 4:1 for Category I wetland impacts when proposing creation/reestablishment. The highest range of ratios is required when enhancement is proposed as compensation for wetland impacts because it does not result in a no-net-loss of wetland acreage. Kitsap County will usually defer to the Corps and Ecology for mitigation of wetland impacts but require submittal mitigation and delineation reports. Buffer impacts are mitigated at a ratio of 1:1.

- **U.S. Army Corps of Engineers**-The Corps regulates direct impacts to wetland through Section 401 of the Clean Water Act, Nationwide Permit (NWP) process, which requires submittal of wetland delineation and mitigation plan reports along with the Joint Aquatic Resources Permit Application (JARPA). The list of possible NWPs for which a project can apply is extensive and the NWP for a specific project dependent on the type of activity and project proposed. This trail project will likely meet the criteria for NWP 14-Linear Transportation Project or NWP 18-Minor Discharges depending on the extent of impact and whether it meets all of the criteria. As part of the Corps process, cultural resources and biological assessment reports may be required if features of cultural importance are identified in the project area and if there will be impacts to endangered or threatened wildlife species, respectively. The Corps determine if these additional reports will be required. Consultation with the U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries (NOAA) will be necessary if a biological assessment is required to concur with the results of the assessment.
- **Washington Department of Ecology (Ecology)**-Ecology regulates direct wetland impacts through the Water Quality Certification (WQC) process. The WQC is issued following issuance of the NWP and is sometimes issued as part of the NWP by the Corps who determines if the project meets the criteria of the WQC. The delineation and mitigation reports submitted to the Corps are also submitted to Ecology during the permitting process.
- **Washington Department of Fish and Wildlife (WDFW)**-The WDFW issues Hydraulic Project Approval (HPA) for projects proposing to cross or otherwise disturb streams below the Ordinary High Water Mark (OHWM) or critical habitat. An HPA will be required for the culvert crossings of state regulated streams to ensure that the crossings will not have adverse impacts on the stream and habitat areas.

## **LIMITATIONS**

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The services described in this report were performed consistent with generally accepted professional consulting principles and practices. There are no other warranties, express or implied. The services performed were consistent with our agreement with our client. This report is prepared solely for the use of our client and may not be used or relied upon by a third party for any purpose. Any such use or reliance will be at such party's risk.

The opinions and recommendations contained in this report apply to conditions existing when services were performed. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report. ELS does not warrant the accuracy of supplemental information incorporated in this report that was supplied by others.

## REFERENCES

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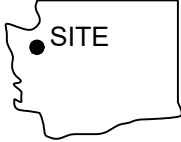


## **FIGURES AND PHOTOPLATES**

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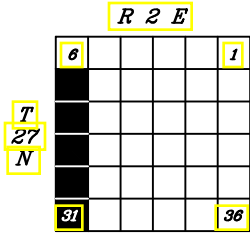
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WASHINGTON



47.8321° Latitude  
-122.5997° Longitude

LOCATION MAP



**NOTE:**  
USGS topographic quadrangle map reproduced using  
MAPTECH Inc., Terrain Navigator Pro software.

### PROJECT VICINITY MAP

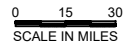
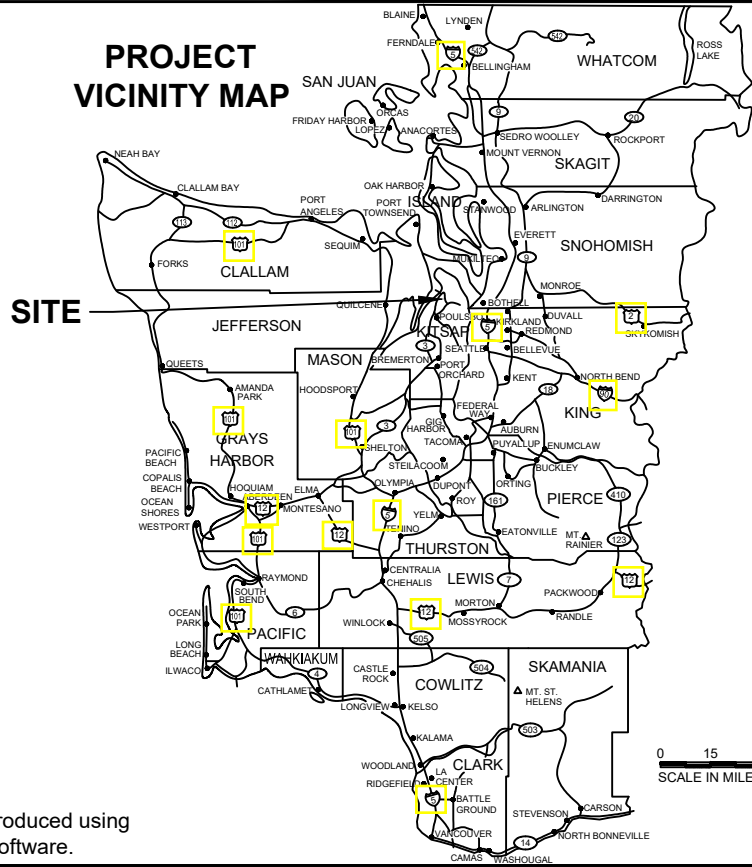


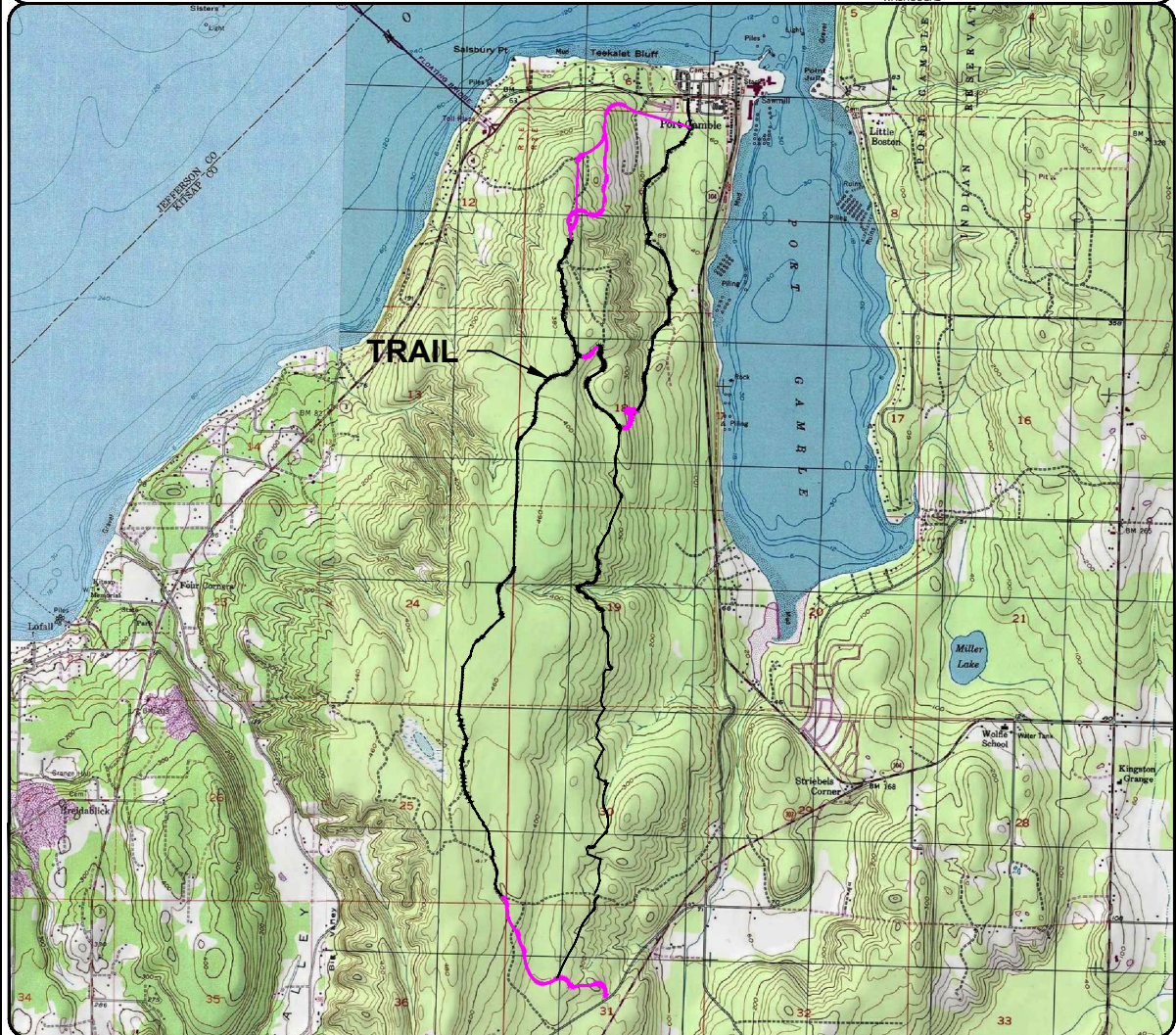
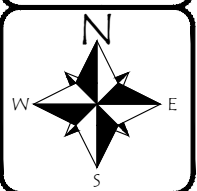
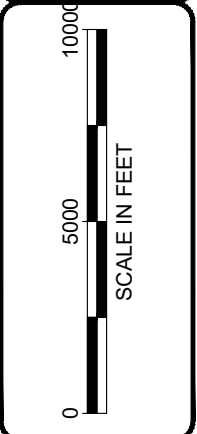
Figure 1

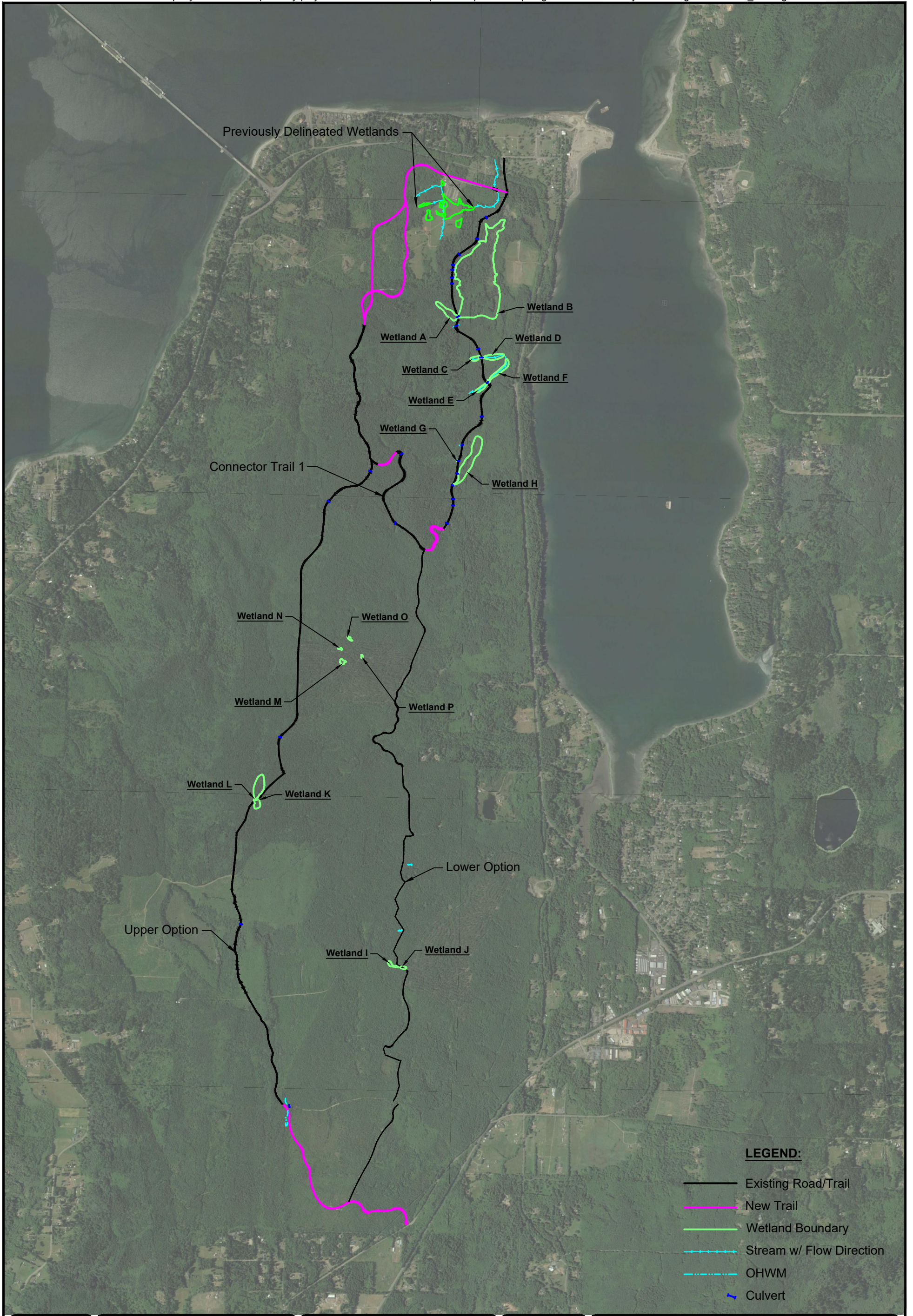
VICINITY MAP  
Port Gamble Trail Feasibility  
Fischer Bouma Partnership  
Kitsap County, WA

Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

DATE: 11/29/17  
DWN: JLL  
REQ. BY:  
PRJ. MGR: JB  
CHK:  
PROJECT NO:  
2212.04

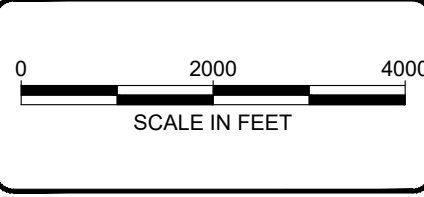
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**LEGEND:**

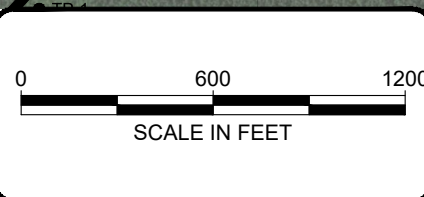
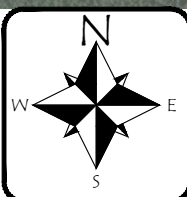
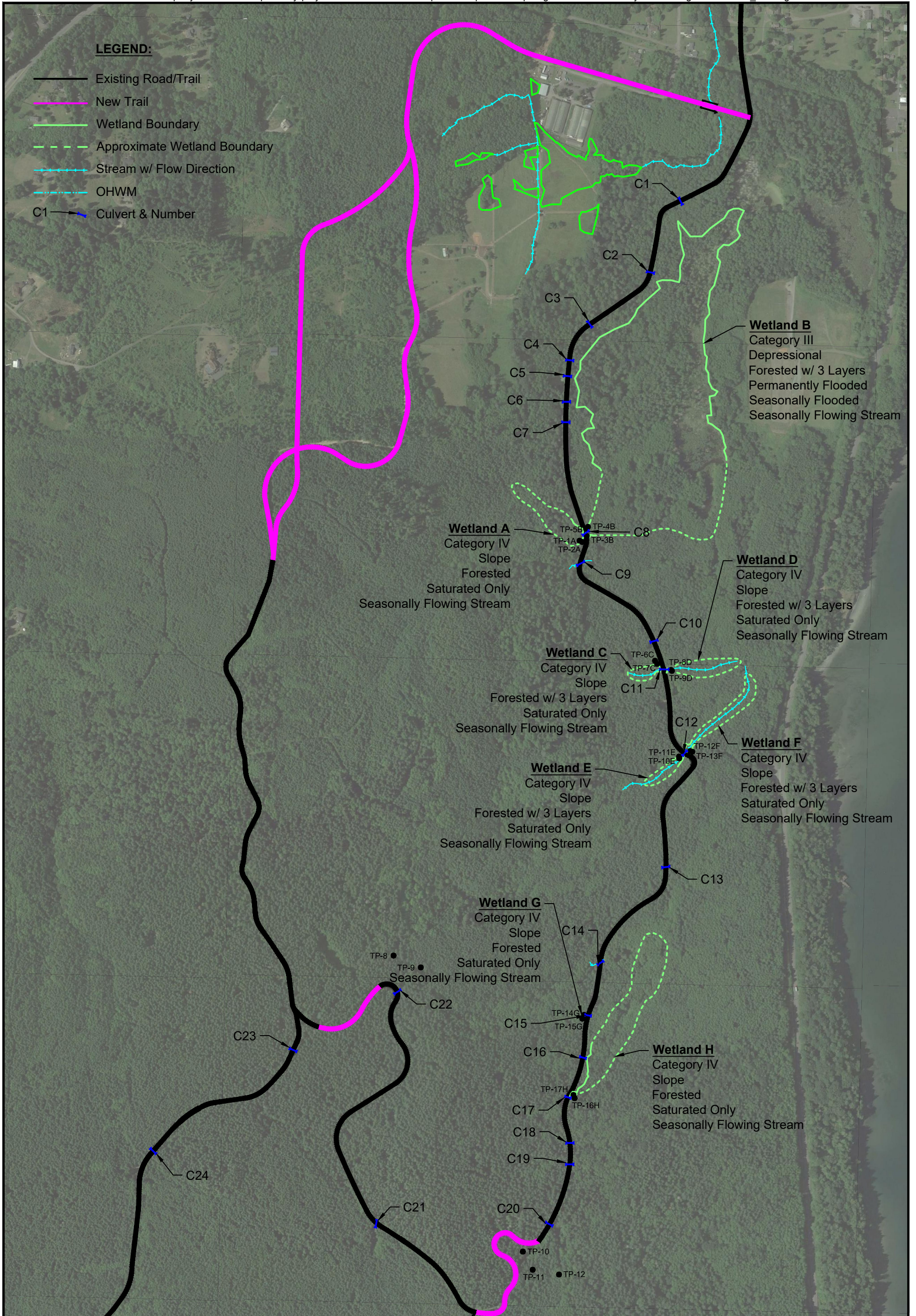
- Existing Road/Trail
- New Trail
- Wetland Boundary
- Stream w/ Flow Direction
- OHWM
- Culvert



  
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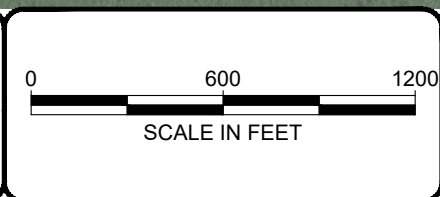
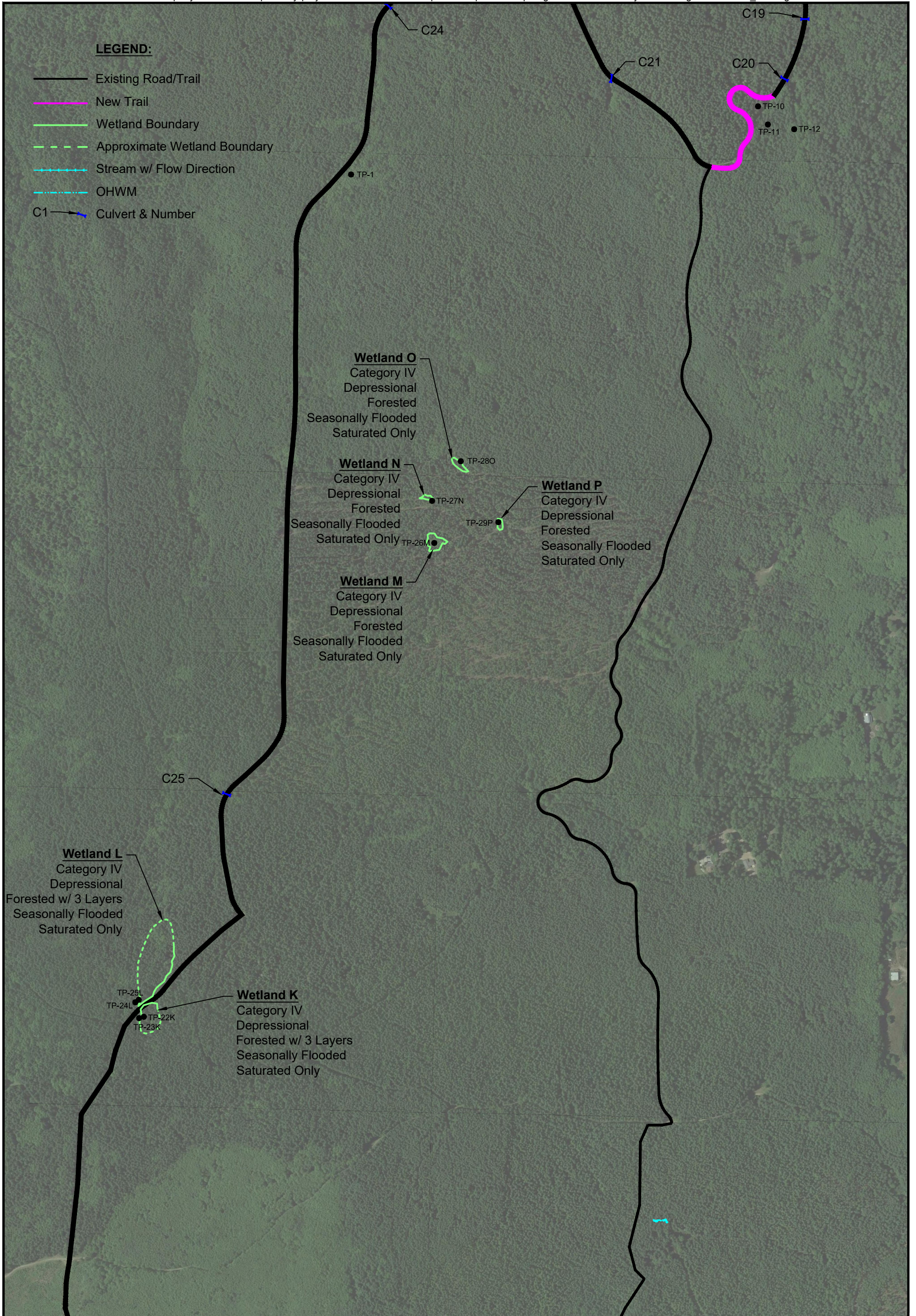
Figure 2  
 SITE MAP OVERVIEW  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7,18,19,30,31, Township 27N, Range 2E, W.M.



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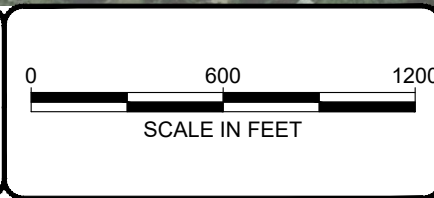
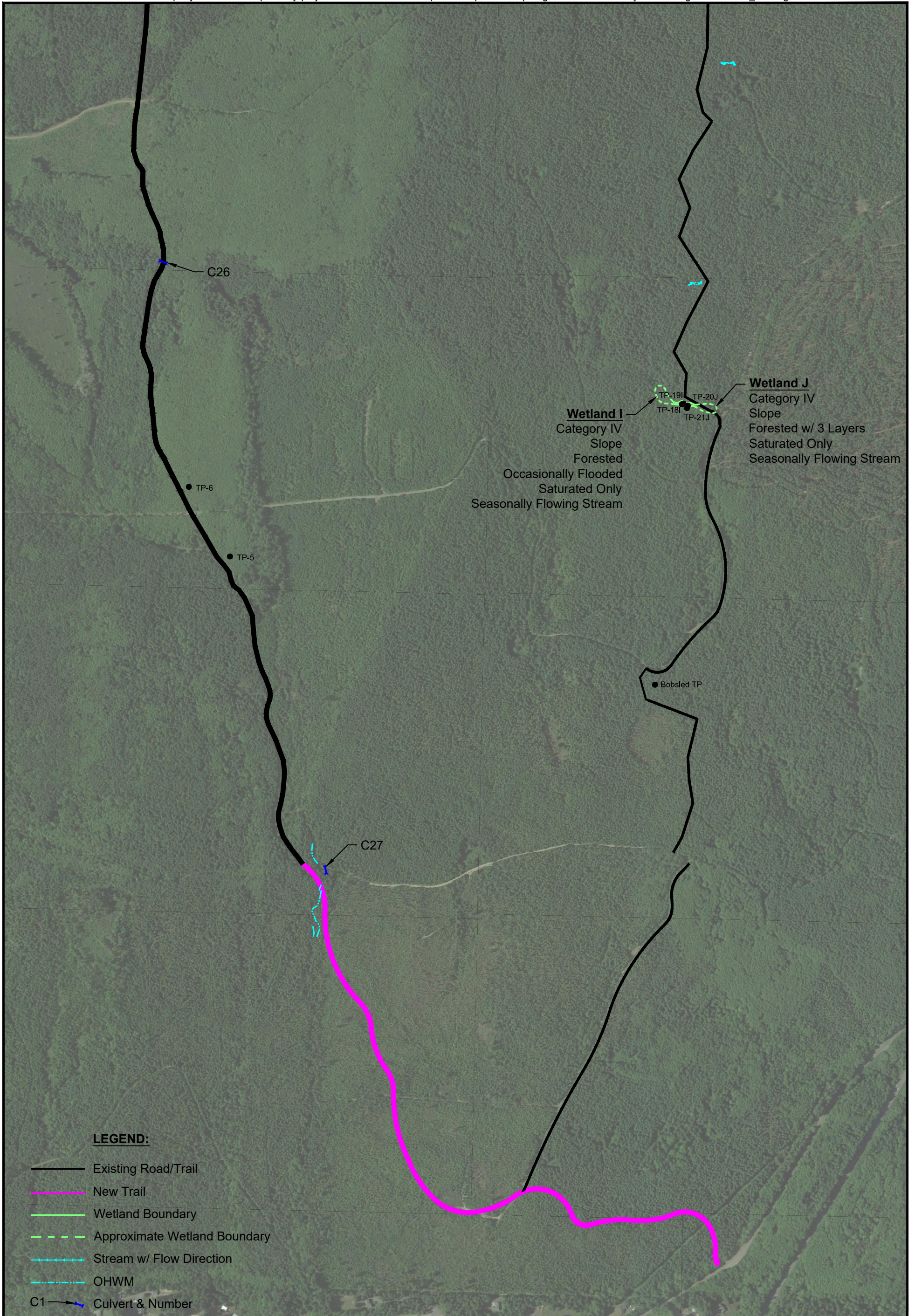
Figure 3  
SITE MAP NORTH  
Port Gamble Trail Feasibility  
Fischer Bouma Partnership  
Kitsap County, WA  
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Figure 4  
SITE MAP CENTER  
Port Gamble Trail Feasibility  
Fischer Bouma Partnership  
Kitsap County, WA  
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Figure 5  
 SITE MAP SOUTH  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7,18,19,30,31, Township 27N, Range 2E, W.M.

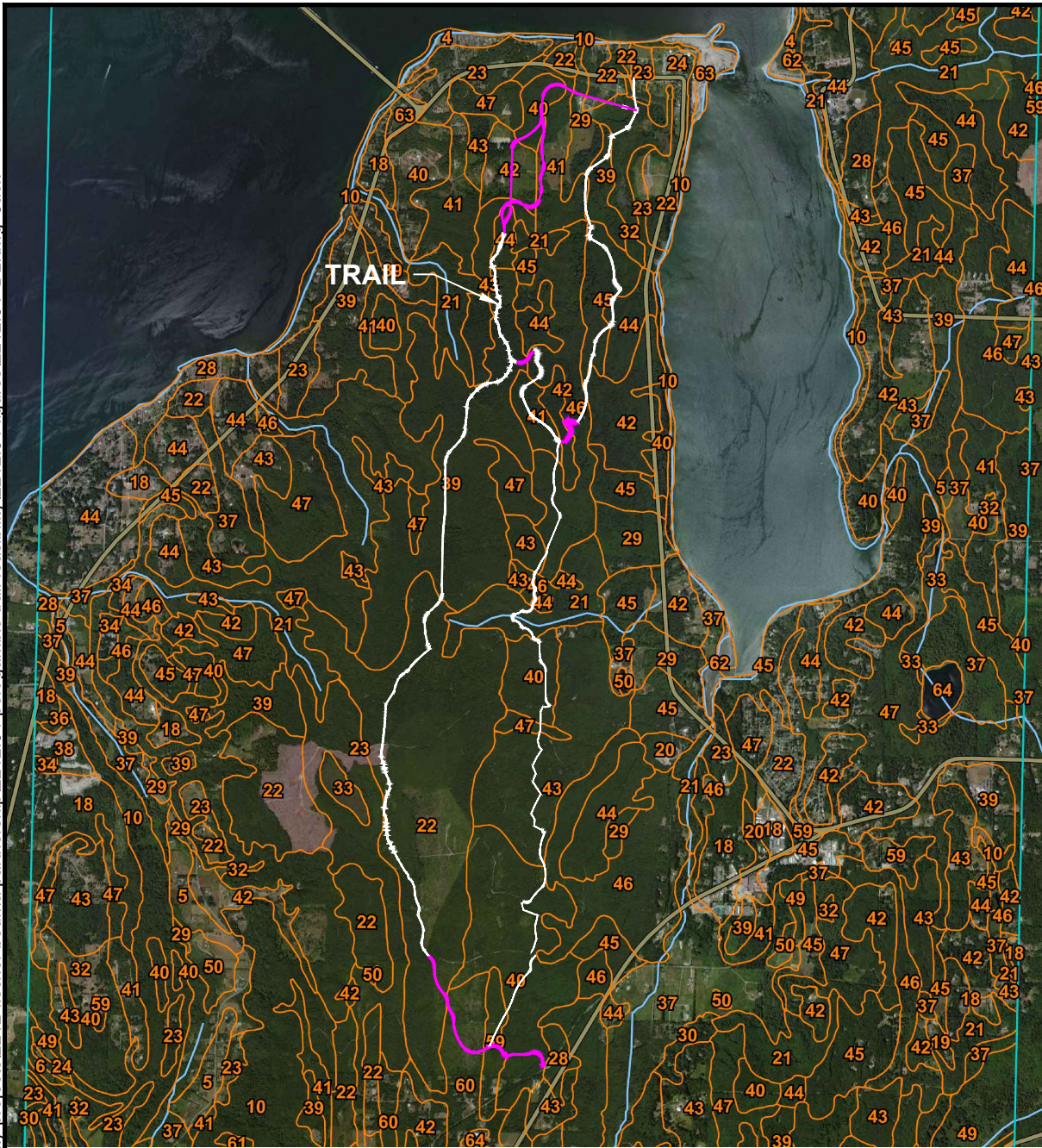


Figure 6  
**SOIL SURVEY MAP**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
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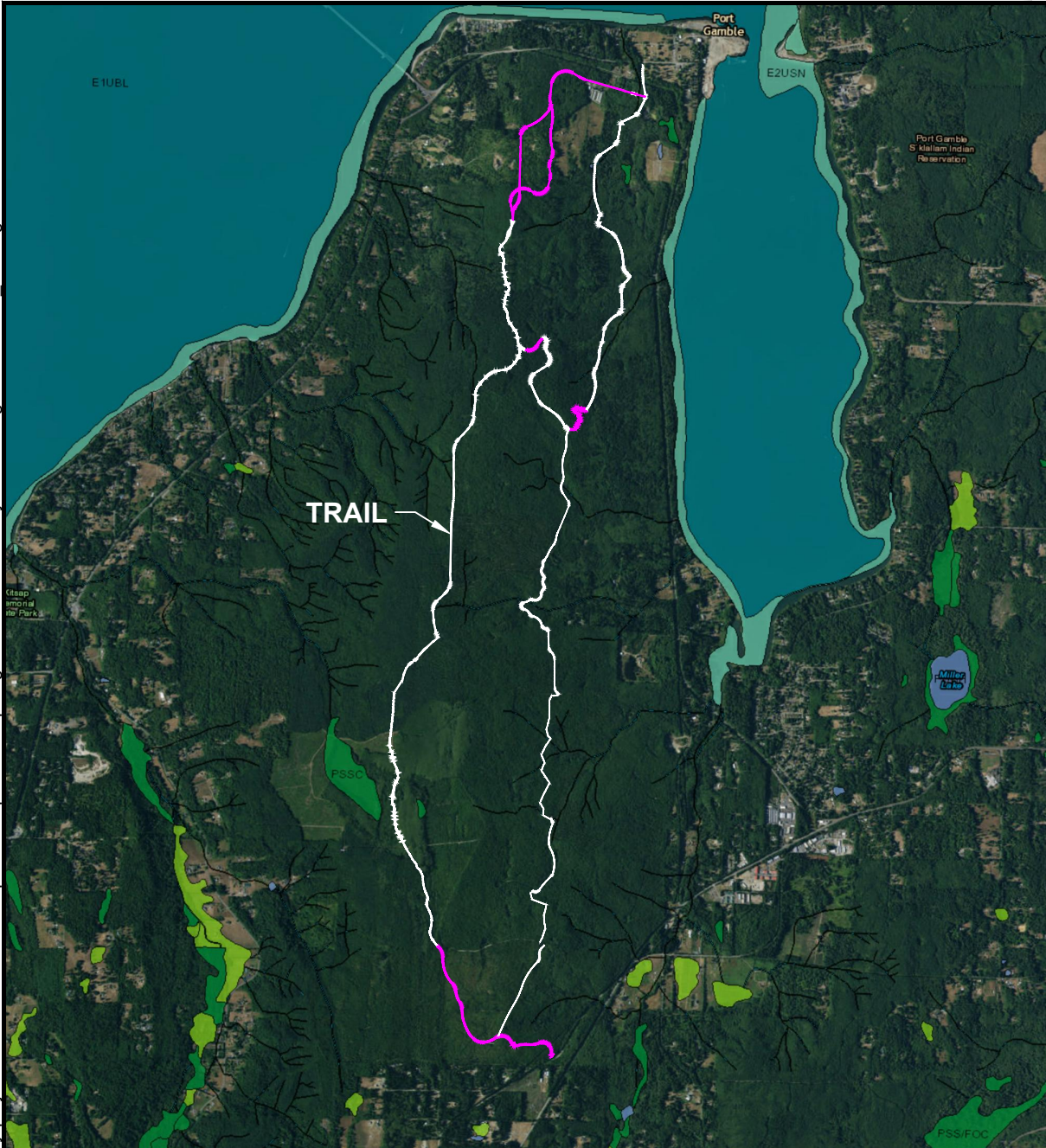
**LEGEND:**

- |  |   |
|--|---|
| <p>4 Beaches. <b>Hydric.</b><br/>                 5 Belfast loam. Not hydric.<br/>                 6 Bellingham silty clay loam. <b>Hydric.</b><br/>                 10 Dystric Xerorthents, 45 to 70 percent slopes. Not hydric.<br/>                 18 Indianola loamy sand, 0 to 5 percent slopes. Not hydric.<br/>                 19 Indianola loamy sand, 5 to 15 percent slopes. Not hydric.<br/>                 20 Indianola loamy sand, 15 to 30 percent slopes. Not hydric.<br/>                 21 Indianola-Kitsap complex, 45 to 70 percent slopes. Not hydric.<br/>                 22 Kapowsin gravelly ashy loam, 0 to 6 percent slopes. Not hydric.<br/>                 23 Kapowsin gravelly ashy loam, 6 to 15 percent slopes. Not hydric.<br/>                 24 Kapowsin variant gravelly clay loam, 0 to 5 percent slopes. Not hydric.<br/>                 28 Kitsap silt loam, 2 to 8 percent slopes. Not hydric.<br/>                 29 Kitsap silt loam, 8 to 15 percent slopes. Not hydric.<br/>                 30 Kitsap silt loam, 15 to 30 percent slopes. Not hydric.<br/>                 31 Kitsap silt loam, 30 to 45 percent slopes. Not hydric.<br/>                 32 McKenna gravelly loam. <b>Hydric.</b><br/>                 33 Mukilteo peat. <b>Hydric.</b><br/>                 34 Neilton gravelly loamy sand, 0 to 3 percent slopes. Not hydric.<br/>                 36 Neilton gravelly loamy sand, 15 to 30 percent slopes. Not hydric.<br/>                 37 Norma fine sandy loams. <b>Hydric.</b><br/>                 38 Pits</p> | <p>39 Poulsbo gravelly sandy loam, 0 to 6 percent slopes. Not hydric.<br/>                 40 Poulsbo gravelly sandy loam, 6 to 15 percent slopes. Not hydric.<br/>                 41 Poulsbo gravelly sandy loam, 15 to 30 percent slopes. Not hydric.<br/>                 42 Poulsbo-Ragnar complex, 0 to 6 percent slopes. Not hydric.<br/>                 43 Poulsbo-Ragnar complex, 6 to 15 percent slopes. Not hydric.<br/>                 44 Ragnar fine sandy loam, 0 to 6 percent slopes. Not hydric.<br/>                 45 Ragnar fine sandy loam, 6 to 15 percent slopes. Not hydric.<br/>                 46 Ragnar fine sandy loam, 15 to 30 percent slopes. Not hydric.<br/>                 47 Ragnar-Poulsbo complex, 15 to 30 percent slopes. Not hydric.<br/>                 49 Semiahmoo muck. <b>Hydric.</b><br/>                 50 Shalcar muck. <b>Hydric.</b><br/>                 59 Sinclair very gravelly sandy loam, 2 to 8 percent slopes. Not hydric.<br/>                 60 Sinclair very gravelly sandy loam, 8 to 15 percent slopes. Not hydric.<br/>                 61 Sinclair very gravelly sandy loam, 15 to 30 percent slopes. Not hydric.<br/>                 62 Tacoma silt loam. <b>Hydric.</b><br/>                 63 Urban land-Alderwood complex, 0 to 8 percent slopes. Not hydric.<br/>                 64 Water</p> |
|--|---|

**NOTE(S):**

1. Map provided on-line by NRCS at web address: <http://websoilsurvey.nrcs.usda.gov/app/>

SCALE IN FEET

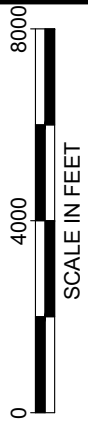


**LEGEND:**

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Pond

**NOTE(S):**

1. Map provided on-line by US Fish & Wildlife Service at web address:  
<http://www.fws.gov/wetlands/data/index.html>

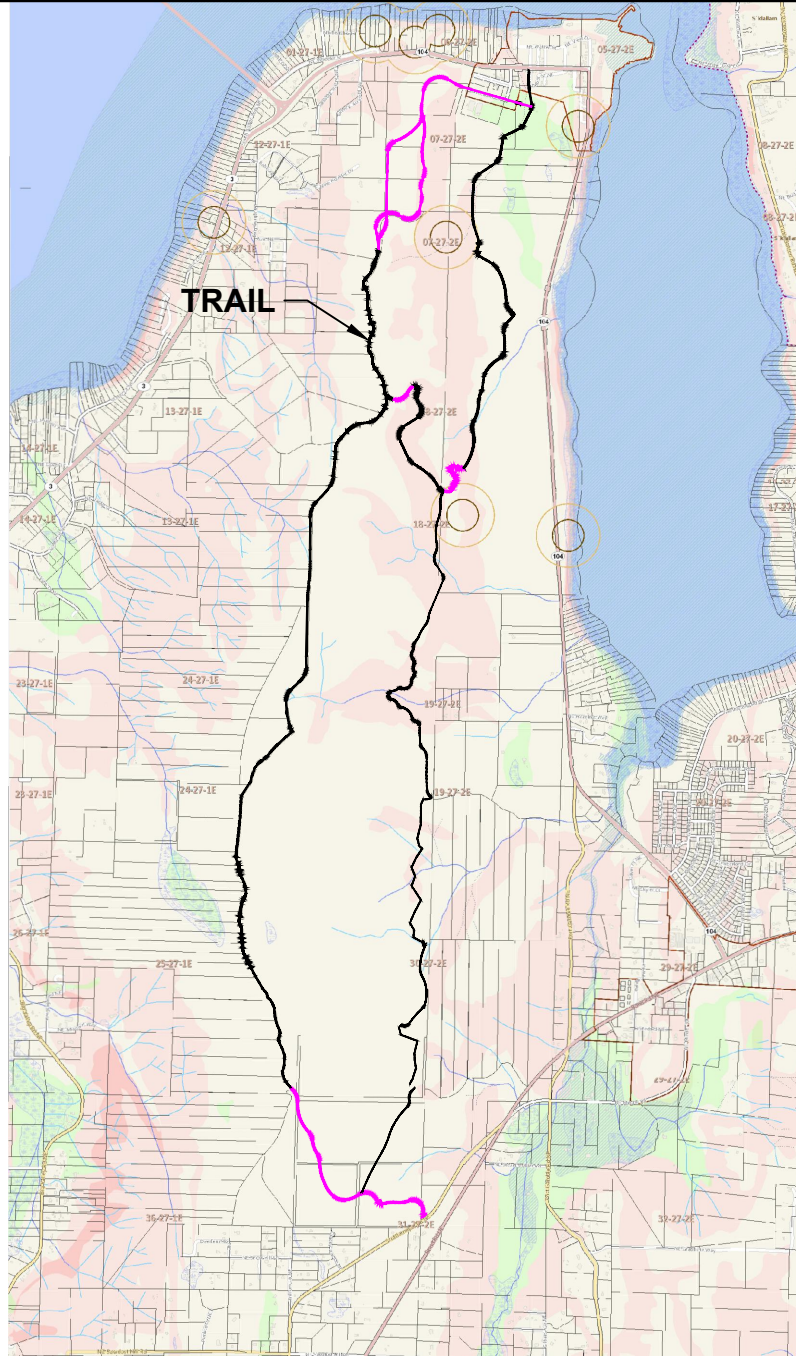


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Figure 7  
**NATIONAL WETLANDS INVENTORY MAP**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.



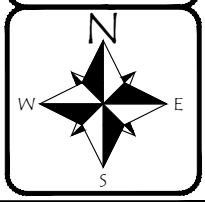
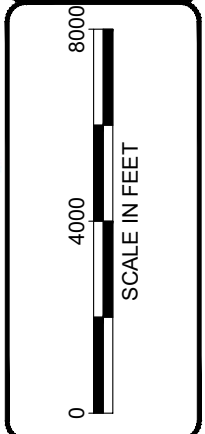


**Figure 8**  
**KITSAP COUNTY CRITICAL AREAS MAP**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

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**Ecological Land Services**



**Streams**

- WA DNR Water Courses
- (S) Designated Shorelines
- (F) Fish Habitat
- (N) Non-fish Habitat
- (U) Unknown

**Parcels**

- Tax Parcels Outlines

**Buildings**

- Building Footprints

**Roads**

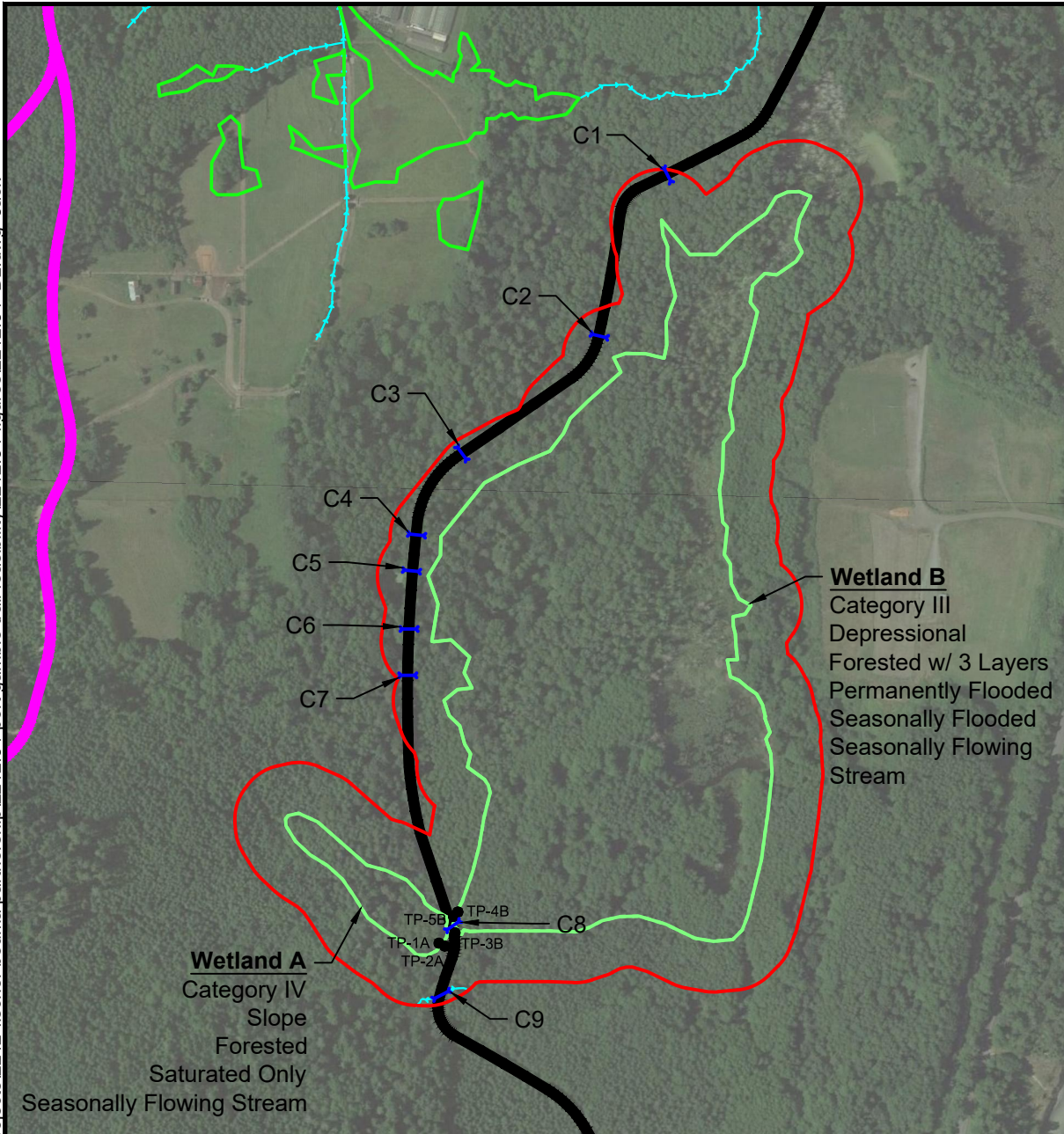
- Roads
- Local Roads
- State Highway
- Collector / Arterial
- Local Roads

**Critical Areas**

- Waterbodies (defined in WAC 222-16-030)
  - Includes DNR, NWI, and Surveyed Wetlands
- Wetlands (DNR, NWI, Surveys)
  - DNR, NWI, Surveyed Wetlands
- FEMA Flood Hazard Areas
  - 100 Year Floodplain
- Hydic Soils (SCS Soil Survey)
  - Potential Wetlands
- Geohazards
  - High Hazard Areas
  - Moderate Hazard Areas

**NOTE(S):**

1. Map provided on-line by Kitsap County at web address:  
<https://psearch.kitsapgov.com/webappa/>



**Wetland A**  
 Category IV  
 Slope  
 Forested  
 Saturated Only  
 Seasonally Flowing Stream

**Wetland B**  
 Category III  
 Depressional  
 Forested w/ 3 Layers  
 Permanently Flooded  
 Seasonally Flooded  
 Seasonally Flowing  
 Stream

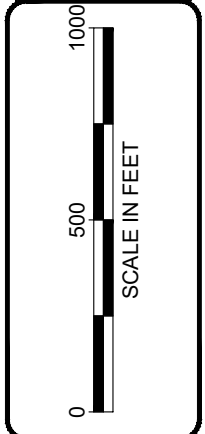
**LEGEND:**  
 — Wetland Unit Boundary  
 — 150' Wetland Offset

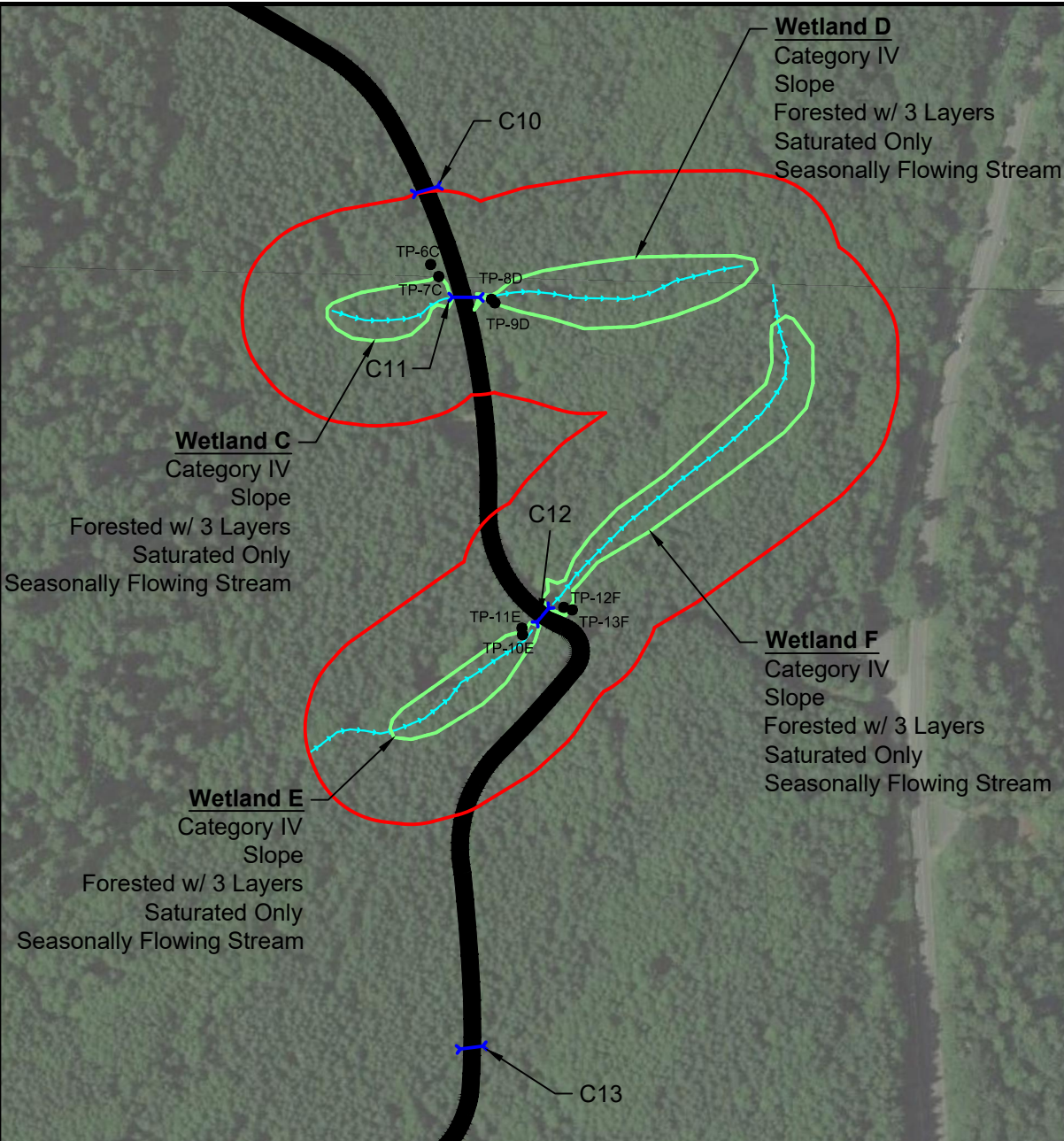
**NOTE(S):**  
 1. Aerial photo from Google Earth™.

**Figure 9**  
**WETLAND RATING FORM-150' OFFSET A-B**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

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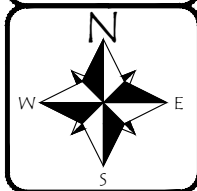
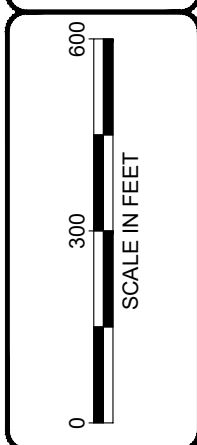


**Figure 10**  
**WETLAND RATING FORM-150' OFFSET C-F**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

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**Ecological Land Services**

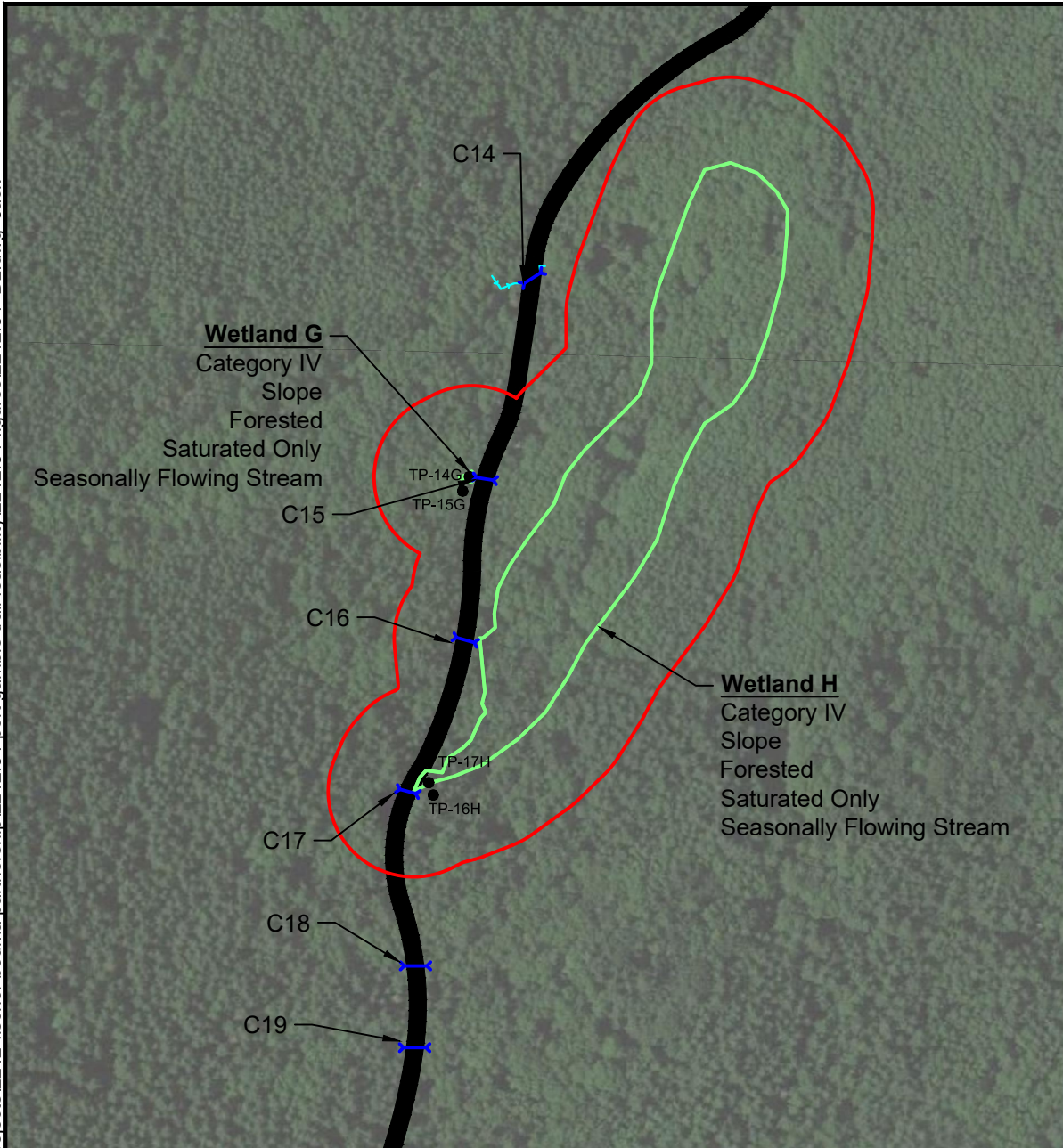


**LEGEND:**

- Wetland Unit Boundary
- 150' Wetland Offset

**NOTE(S):**

1. Aerial photo from Google Earth™.

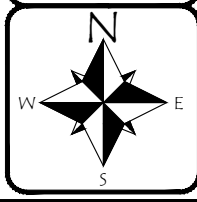
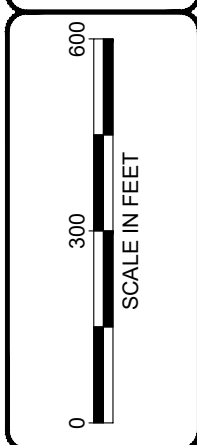


**Figure 11**  
**WETLAND RATING FORM-150' OFFSET G-H**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

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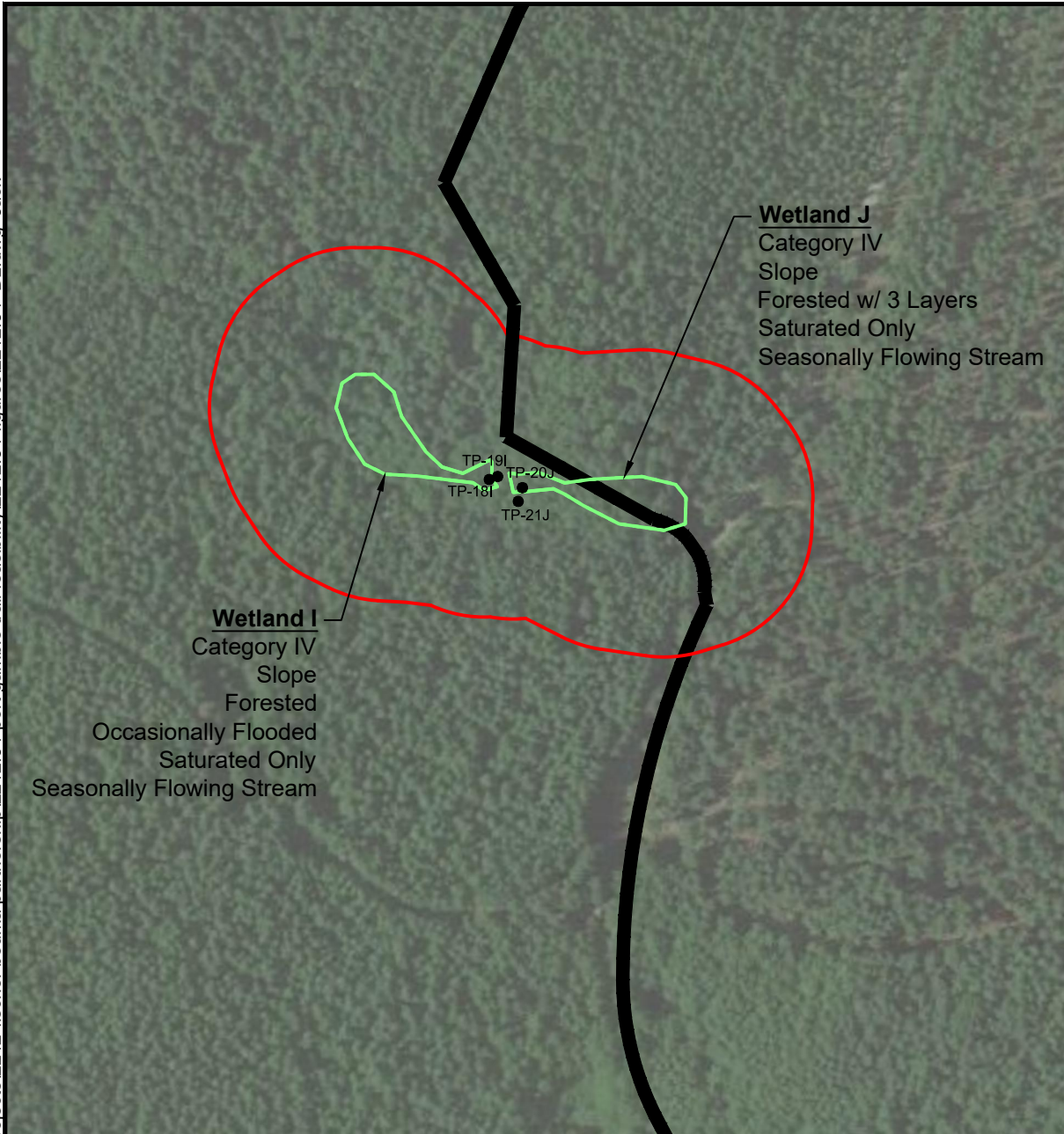
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**Ecological Land Services**



**LEGEND:**  
 Wetland Unit Boundary  
 150' Wetland Offset

**NOTE(S):**  
 1. Aerial photo from Google Earth™.



**Wetland I**  
 Category IV  
 Slope  
 Forested  
 Occasionally Flooded  
 Saturated Only  
 Seasonally Flowing Stream

**Wetland J**  
 Category IV  
 Slope  
 Forested w/ 3 Layers  
 Saturated Only  
 Seasonally Flowing Stream

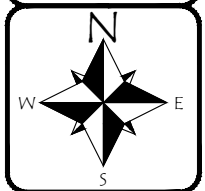
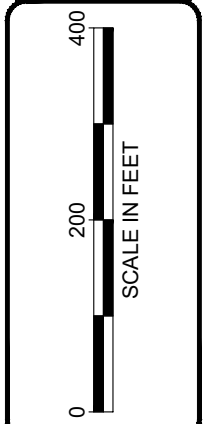
**LEGEND:**  
 — Wetland Unit Boundary  
 — 150' Wetland Offset

**NOTE(S):**  
 1. Aerial photo from Google Earth™.

**Figure 12**  
**WETLAND RATING FORM-150' OFFSET I-J**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

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**Wetland L**  
 Category IV  
 Depressional  
 Forested w/ 3 Layers  
 Seasonally Flooded  
 Saturated Only

TP-25L  
 TP-24L

TP-22K  
 TP-23K

**Wetland K**  
 Category IV  
 Depressional  
 Forested w/ 3 Layers  
 Seasonally Flooded  
 Saturated Only

**LEGEND:**  
 Wetland Unit Boundary  
 150' Wetland Offset

**NOTE(S):**

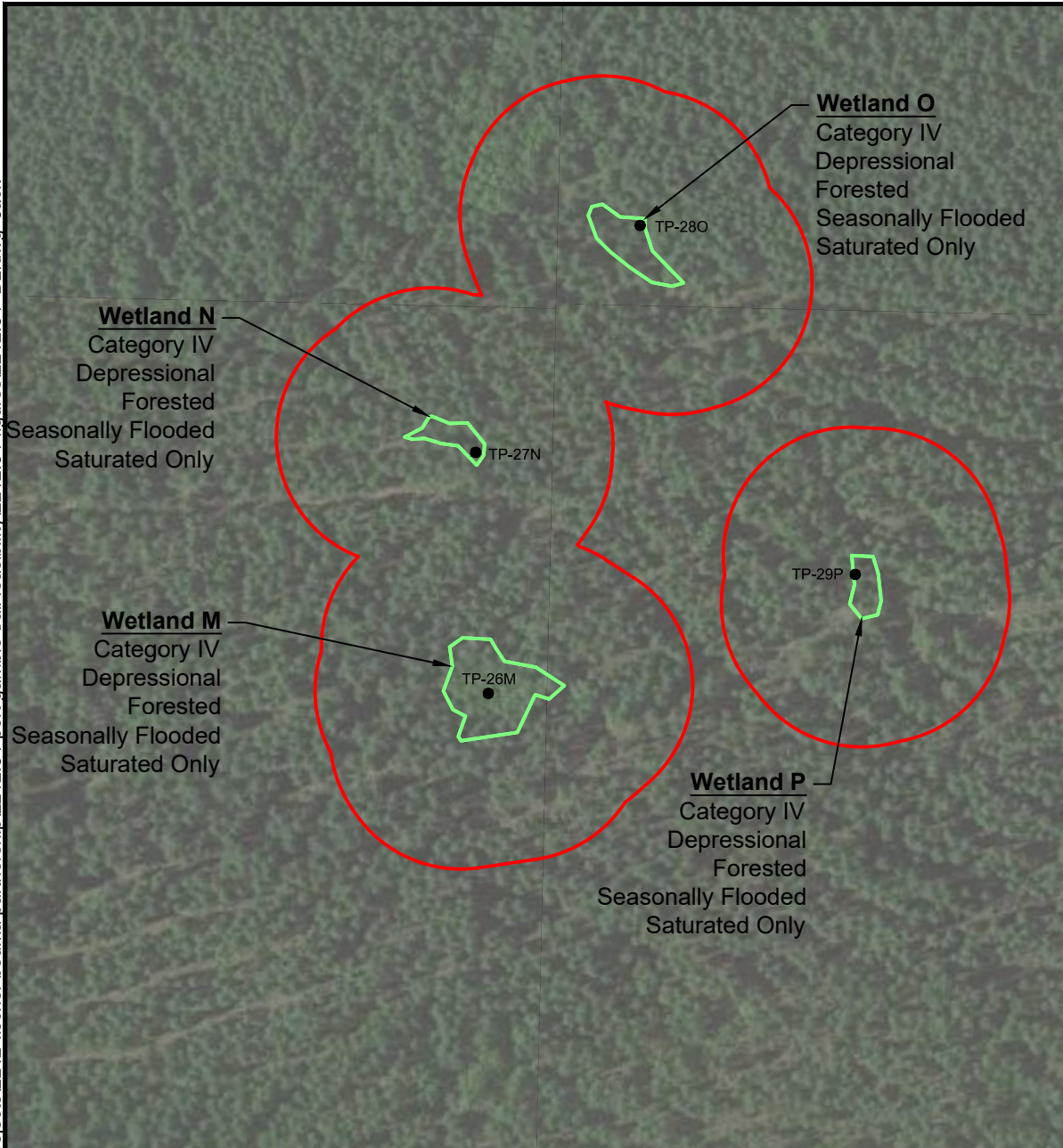
1. Aerial photo from Google Earth™.



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Figure 13  
**WETLAND RATING FORM-150' OFFSET K-L**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.



**Wetland N**  
 Category IV  
 Depressional  
 Forested  
 Seasonally Flooded  
 Saturated Only

**Wetland M**  
 Category IV  
 Depressional  
 Forested  
 Seasonally Flooded  
 Saturated Only

**Wetland P**  
 Category IV  
 Depressional  
 Forested  
 Seasonally Flooded  
 Saturated Only

**Wetland O**  
 Category IV  
 Depressional  
 Forested  
 Seasonally Flooded  
 Saturated Only


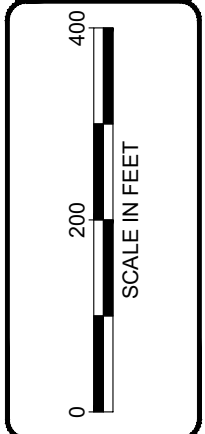
**NOTE(S):**  
 1. Aerial photo from Google Earth™.

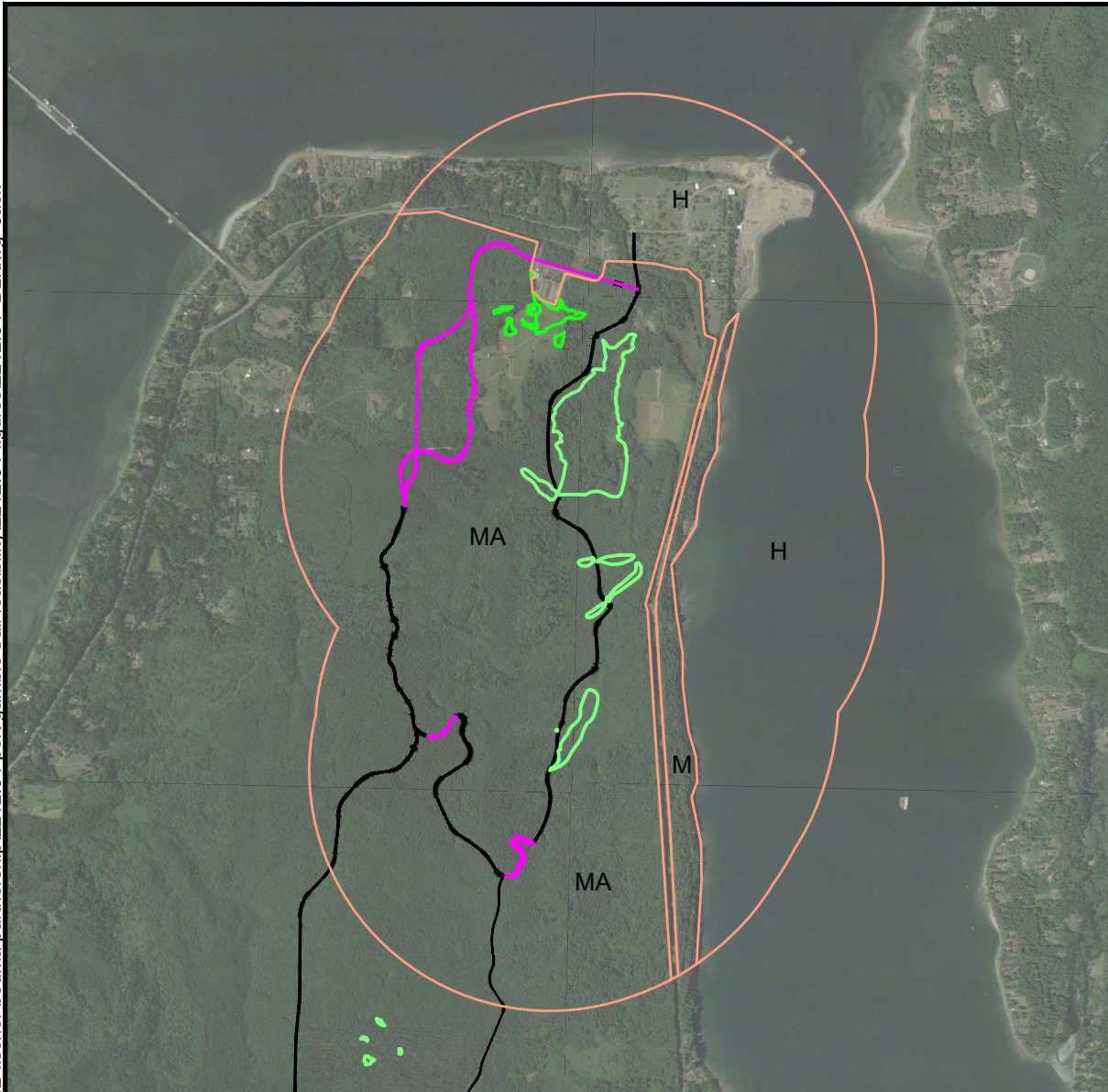
**LEGEND:**  
 Wetland Unit Boundary  
 150' Wetland Offset

Figure 14  
**WETLAND RATING FORM-150' OFFSET M-P**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

DATE: 11/29/17  
 DWN: JLL  
 REQ. BY:  
 PRJ. MGR: JB  
 CHK:  
 PROJECT NO:  
 2212.04

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**LEGEND:**

- Wetland Unit Boundary
- Contributing Basin
- A Accessible Undisturbed Habitat (0.0%)
- U Total Undisturbed Habitat (0.0% \*Includes Accessible Habitat)
- H High Intensity Land Use (37.9%)
- M Moderate/Low Intensity Land Use (62.1% \*Includes MA)
- MA Moderate/Low Intensity Land Use Directly Abutting Wetland (58.9%)

H 2.1 - Accessible habitat is 20-33% of 1 km Polygon (29.5%).  
 H 2.2 - Undisturbed habitat < 10% of 1 km Polygon (0.0%).  
 H 2.3 - ≤ 50% of polygon is high land use intensity.

**NOTE(S):**

1. Aerial photo from Google Earth™.

**Figure 15**

**WETLAND RATING FORM-1 KM OFFSET A-H**

Port Gamble Trail Feasibility

Fischer Bouma Partnership

Kitsap County, WA

Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

---

DATE: 11/29/17

DWN: JLL

REQ. BY:

PRJ. MGR: JB

CHK:

PROJECT NO: 2212.04

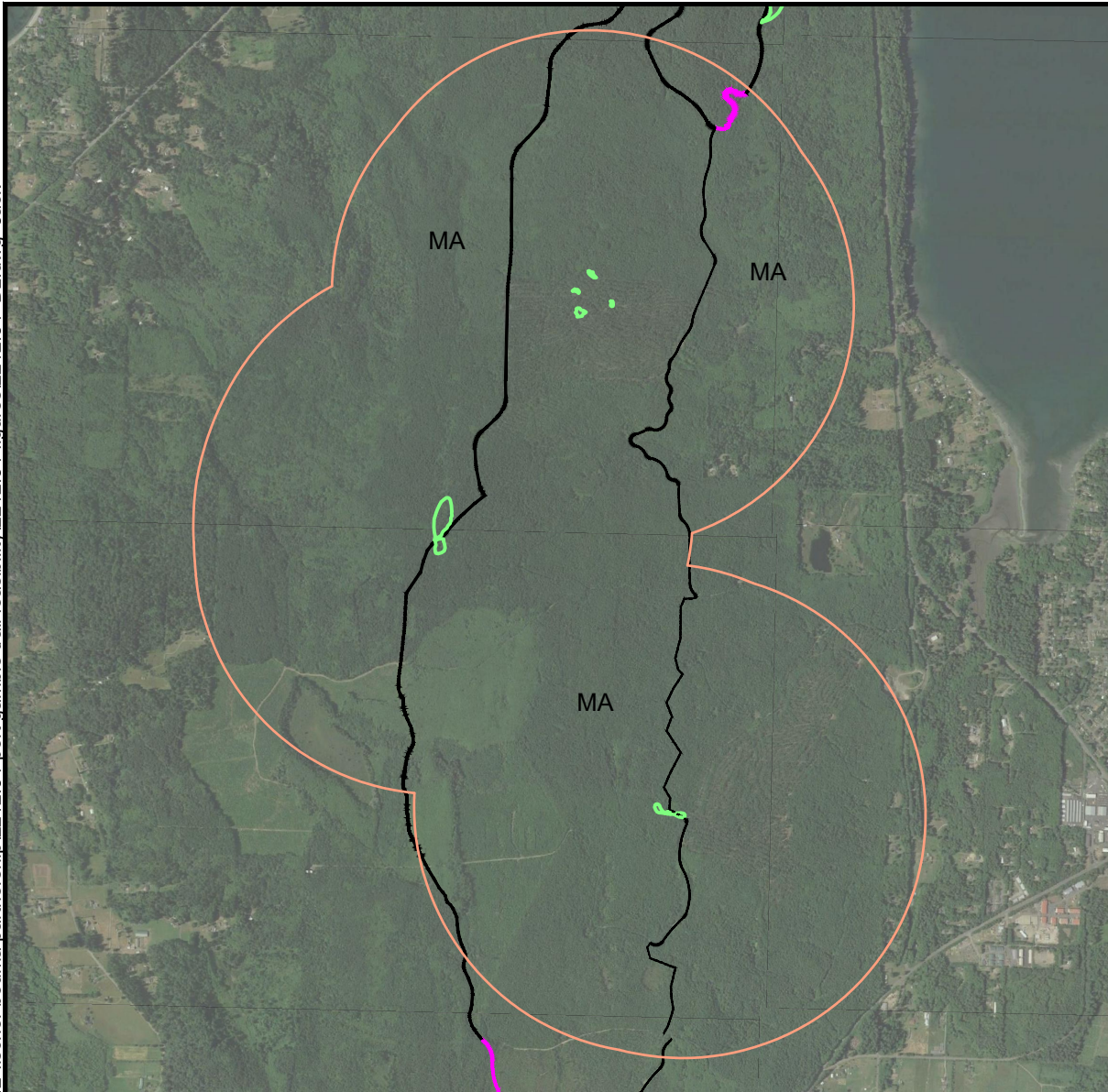
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SCALE IN FEET

---





**LEGEND:**

-  Wetland Unit Boundary
-  Contributing Basin
-  Accessible Undisturbed Habitat (0.0%)
-  Total Undisturbed Habitat (0.0% \*Includes Accessible Habitat)
-  High Intensity Land Use (0.0%)
-  Moderate/Low Intensity Land Use (100.0% \*Includes MA)
-  Moderate/Low Intensity Land Use Directly Abutting Wetland (100.0%)

H 2.1 - Accessible habitat is > 1/3 (33.3%) of 1 km Polygon (50.0%).  
 H 2.2 - Undisturbed habitat < 10% of 1 km Polygon (0.0%).  
 H 2.3 - ≤ 50% of polygon is high land use intensity.


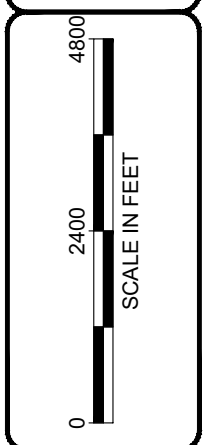
**NOTE(S):**

1. Aerial photo from Google Earth™.

Figure 16  
**WETLAND RATING FORM-1 KM OFFSET I-P**  
 Port Gamble Trail Feasibility  
 Fischer Bouma Partnership  
 Kitsap County, WA  
 Section 7, 18, 19, 30, 31, Township 27N, Range 2E, W.M.

DATE: 11/29/17  
 DWN: JLL  
 REQ. BY:  
 PRJ. MGR: JB  
 CHK:  
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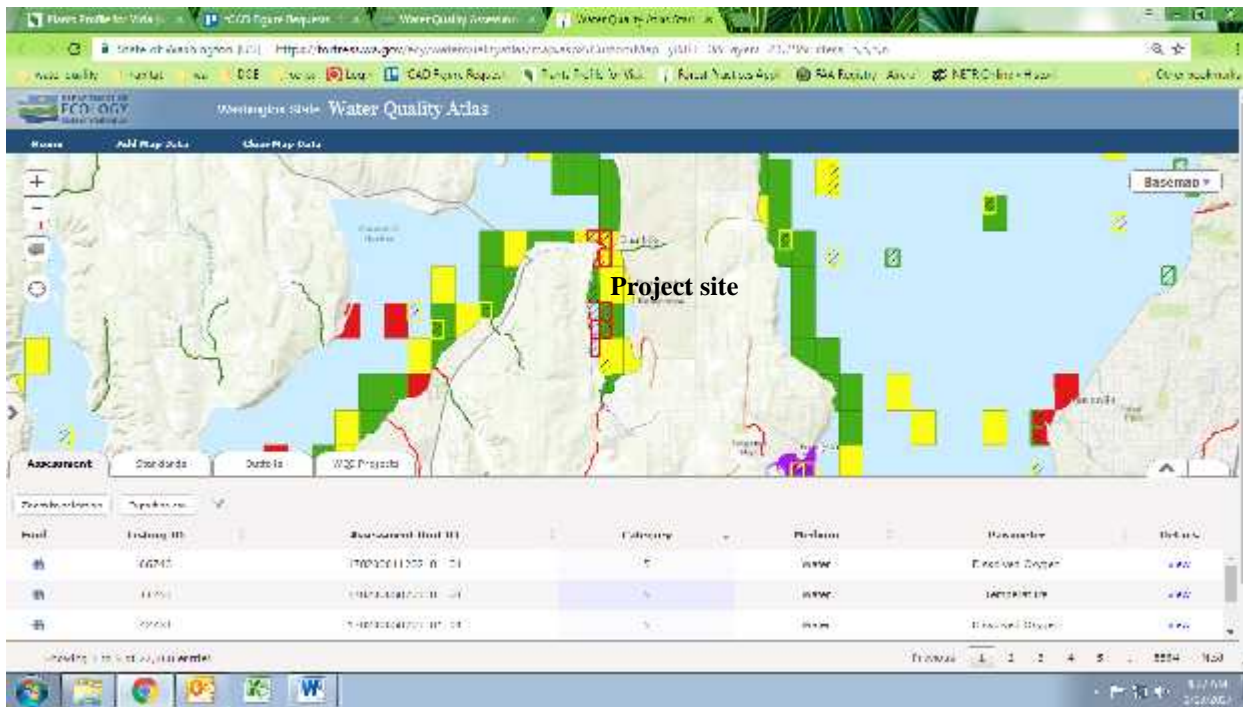


Figure 17a. 303(d) Map: Gamble Bay has several 303(d) listed materials.



Figure 17b. TMDL List for Kitsap County. There are TMDLs for Gamble Bay.



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**Figure 17- Wetland Rating Form-303(d)/TMDL**  
 Project Name: Port Gamble Trail Feasibility  
 Client: Fischer Bouma Partnership  
 Kitsap County, Washington



**Photo 1** was taken at the north end of the North Segment, at the entrance gate near the start of the Lower Option, looking south. The North Terminus of the Preferred Alignment is just north of here and the trail here will be 10 feet wide and use the existing road base.



**Photo 2** was taken south of the gate in Photo 1 and shows one of the many culverts along the Lower Option. This culvert is where the beaver pond crosses the existing road.



**Photo 3** was taken from the culvert in Photo 2, looking east, into Wetland B. Wetland B is a depressional beaver pond wetland and was forested prior to the impacts of the beaver activity.



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PRJ. MGR JB  
PROJ.#: 2212.04

Photoplate 1  
Project Name: Port Gamble  
Trail Feasibility  
Client: Fischer Bouma  
Partnership  
Kitsap County, Washington



**Photo 4** was taken in the North Segment of the Lower Option, near the south end of Wetland B and shows the location of the culvert where water flows from Wetland A on the left to Wetland B on the right.



**Photo 5** was taken from the edge of the road along the Lower Option, looking west into Wetland A, a sloping forested wetland.



**Photo 6** was taken from the road and shows where the culvert outlets into Wetland B.



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Photoplate 2  
Project Name: Port Gamble  
Trail Feasibility  
Client: Fischer Bouma  
Partnership  
Kitsap County, Washington



**Photo 7** was taken in the North Segment of the Lower Option, south of Wetlands A and B, looking east into Wetland C and shows the typical vegetation of Wetlands C and D: alder trees and salmonberry.



**Photo 8** was taken south of Wetlands C and D and shows the Lower Option as it continues south. Wetland E is shown on the left and Wetland F is on the right. The new trail will be 14 feet wide in this section and use the existing logging road as a base.



**Photo 9** was taken further south along the Lower Option, looking southwest and shows the flooded area of Wetland G draining into the culvert.



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Photoplate 3  
Project Name: Port Gamble  
Trail Feasibility  
Client: Fischer Bouma  
Partnership  
Kitsap County, Washington



**Photo 10** shows Wetland M, a depressional wetland identified in the vicinity of the potential Connection 2 Trail between the Lower and Upper Options. Four wetlands were located in the vicinity of the potential trail alignment, which runs south of the Downhill Trail.



**Photo 11** was taken in the same area as Photo 28, and shows Wetland N, another depressional wetland in the vicinity of the potential Connector 2 Trail.



**Photo 12** was taken along the Upper Option, south of the potential Connector 2 Trail. The alignment will be 14 feet wide in this section and use the existing road as a base.



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Photoplate 4  
Project Name: Port Gamble  
Trail Feasibility  
Client: Fischer Bouma  
Partnership  
Kitsap County, Washington



**Photo 13** was taken along the Upper Option, in the Center Segment. Wetland L is along the left side of the road and Wetland K is on the right side.



**Photo 14** shows the area of overflow between Wetlands L and K. A new culvert will be needed in this area to avoid flooding of the future trail. The culvert connects the two wetlands and does not represent a stream channel.



**Photo 15** was taken south of Wetlands L and K on the Upper Option in the Center Segment.



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Photoplate 5  
Project Name: Port Gamble  
Trail Feasibility  
Client: Fischer Bouma  
Partnership  
Kitsap County, Washington



**Photo 16** was taken in the South Segment of the Lower Option and shows the narrow footpath crossing between Wetland I on the right and Wetland J on the left. Construction of the alignment in this area would have direct impacts to both of these wetlands.



**Photo 17** was taken along the South Segment of the Lower Option and shows one of the two streams that the trail crosses.



**Photo 18** was taken from part of the South Segment of the Lower Option called Bobsled Trail. No wetlands were found along this area, but the trail is narrow and the topography is highly variable.



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Photoplate 6  
Project Name: Port Gamble  
Trail Feasibility  
Client: Fischer Bouma  
Partnership  
Kitsap County, Washington





**Photo 19** shows part of the Upper Option in the South Segment, as it passes through a younger stand of Douglas fir trees. From here the Preferred Alignment continues south to Service Road 1810.



**Photo 20** was taken along Service Road 1810 and shows where a stream crosses through Culvert 27. It is recommended to use this existing road and culvert to cross the stream before continuing the new trail south.



**Photo 21** shows where the stream exits Culvert 27 and flows south.



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 PROJ.#: 2212.04

Photoplate 7  
 Project Name: Port Gamble  
 Trail Feasibility  
 Client: Fischer Bouma  
 Partnership  
 Kitsap County, Washington



**Photo 22** was taken in the South Segment, and shows the stream that flows south from the culvert in Photo 21. The 150 foot stream buffer will be impacted by the new trail in this area and require mitigation.



**Photo 23** was taken from the Ridgetrail, looking south east and shows where the new trail will be constructed as part of the preferred alignment. No wetlands were found in this area.



**Photo 24** was taken from the Flash Trail, looking south east and shows the area where the preferred alignment will be constructed. From here, the trail will continue south east to Stottlemeyer Road.



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Photoplate 8  
Project Name: Port Gamble  
Trail Feasibility  
Client: Fischer Bouma  
Partnership  
Kitsap County, Washington

## **APPENDIX A**

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 2/22/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: Bobsled TP  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo gravelly sandy loam 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. This test plot is located along a trail named Bobsled near the southern end of the study area.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <i>Pseudotsuga menziesii</i>	15	yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC:	0 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	0 (A/B)
4. _____	_____	_____	_____		
50% = <u>7.5</u> , 20% = <u>3</u>	15	= Total Cover			
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>				<b>Prevalence Index worksheet:</b>	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____	x5 = _____
<u>Herb Stratum (Plot size: 15' diameter)</u>				Column Totals: _____ (A)	_____ (B)
1. _____	_____	_____	_____	Prevalence Index = B/A = _____	
2. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b>	
3. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
4. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%	
5. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$	
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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
9. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>				<b>Hydrophytic Vegetation Present?</b>	
1. _____	_____	_____	_____	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
<u>% Bare Ground in Herb Stratum <u>100</u></u>					

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC, FACW, or OBL species.



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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP1A  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland A is located in the North Segment.					

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b>	
1. <u><i>Alnus rubra</i></u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2. <u><i>Thuja plicata</i></u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	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. _____	_____	_____	_____		
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: 30' diameter)				<b>Prevalence Index worksheet:</b>	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____	x5 = _____
Herb Stratum (Plot size: 15' diameter)				Column Totals: _____ (A)	_____ (B)
1. _____	_____	_____	_____	Prevalence Index = B/A = _____	
2. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b>	
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
Woody Vine Stratum (Plot size: 15' diameter)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	_____	_____	_____	_____	_____	_____	_____	Duff
6-11	10YR 2/1	100	_____	_____	_____	_____	sa si lo	no redoximorphic concentrations
11-16	10YR 4/2	95	10YR 4/6	5	C	M	sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	si - silt
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (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) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark 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 checked="" 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)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.			
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)				

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

Remarks: The soil profile most closely matches the description for hydric soil indicator F3, Depleted Matrix because the depleted matrix begins within 10 inches of the soil surface and has prominent mottling.

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

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>5</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil saturation was observed at 5 inches and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP2A  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none):      Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat:      Long:      Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification:       
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland A is in the North Segment.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u>Thuja plicata</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <span style="float: right;"><u>1</u> (A)</span>  Total Number of Dominant Species Across All Strata: <span style="float: right;"><u>1</u> (B)</span>  Percent of Dominant Species That Are OBL, FACW, or FAC: <span style="float: right;"><u>100</u> (A/B)</span>																
2. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
3. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
4. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
Sapling/Shrub Stratum (Plot size: 30' diameter)				<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>    </u></td> <td>x1 = <u>    </u></td> </tr> <tr> <td>FACW species <u>    </u></td> <td>x2 = <u>    </u></td> </tr> <tr> <td>FAC species <u>    </u></td> <td>x3 = <u>    </u></td> </tr> <tr> <td>FACU species <u>    </u></td> <td>x4 = <u>    </u></td> </tr> <tr> <td>UPL species <u>    </u></td> <td>x5 = <u>    </u></td> </tr> <tr> <td>Column Totals: <u>    </u> (A)</td> <td><u>    </u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>    </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>    </u>	x1 = <u>    </u>	FACW species <u>    </u>	x2 = <u>    </u>	FAC species <u>    </u>	x3 = <u>    </u>	FACU species <u>    </u>	x4 = <u>    </u>	UPL species <u>    </u>	x5 = <u>    </u>	Column Totals: <u>    </u> (A)	<u>    </u> (B)	Prevalence Index = B/A = <u>    </u>	
Total % Cover of:	Multiply by:																			
OBL species <u>    </u>	x1 = <u>    </u>																			
FACW species <u>    </u>	x2 = <u>    </u>																			
FAC species <u>    </u>	x3 = <u>    </u>																			
FACU species <u>    </u>	x4 = <u>    </u>																			
UPL species <u>    </u>	x5 = <u>    </u>																			
Column Totals: <u>    </u> (A)	<u>    </u> (B)																			
Prevalence Index = B/A = <u>    </u>																				
1. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
2. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
3. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
4. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
5. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
50% = <u>    </u> , 20% = <u>    </u>	<u>    </u>	= Total Cover																		
Herb Stratum (Plot size: 15' diameter)				<b>Hydrophytic Vegetation Indicators:</b> <input 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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
2. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
3. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
4. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
5. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
6. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
7. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
8. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
9. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
10. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
11. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
50% = <u>    </u> , 20% = <u>    </u>	<u>    </u>	= Total Cover																		
Woody Vine Stratum (Plot size: 15' diameter)																				
1. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
2. <u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>																	
50% = <u>    </u> , 20% = <u>    </u>	<u>    </u>	= Total Cover																		
% Bare Ground in Herb Stratum <u>100</u>																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species



**SOIL**

Sampling Point: TP2

<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b>								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	_____	_____	_____	_____	_____	_____	_____	Duff
4-7	10YR 2/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
7-16	10YR 4/6	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
<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, RC=Root Channel			
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (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 Dark 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)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<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)					
<b>Restrictive Layer (if present):</b>					<b>Hydric Soils Present?</b>			
Type: _____					Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Depth (inches): _____								
Remarks: Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators								

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
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)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>	<b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Depth (inches): _____			
Depth (inches): _____			
Depth (inches): _____			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.			

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP3B  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%):       
 Subregion (LRR): MLRA 2 Lat:      Long:      Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification:       
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland B is in the North Segment, along Service Road 1000.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>67</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u>Sambucus racemosa</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>																	
2. <u>Thuja plicata*</u>	<u>5</u>	<u>yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u>Tolmiea menziesii</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>																	
2. <u>Carex obnupta</u>	<u>5</u>	<u>no</u>	<u>OBL</u>																	
3. <u>Polystichum munitum</u>	<u>5</u>	<u>no</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>100</u>																				

**Hydrophytic Vegetation Indicators:**

1 – Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is  $\leq 3.0^1$

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: \*seedlings  
 The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-14	10YR 2/2	100					sa lo	no redoximorphic concentrations
14-	10YR 3/2	95	5YR 3/4	5	C	M	sa lo	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  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: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP4B  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland B is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	20	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</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>75</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 20' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	35	yes	FAC																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>17.5</u> , 20% = <u>7</u>	<u>35</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u><i>Polystichum munitim</i></u>	10	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Dryopteris expansa</i></u>	5	yes	FACW																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>85</u>																				

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2								Duff
2-12	10YR 3/1	99	7.5YR 4/6	1	C	M	sa si lo	
12-20	10YR 5/2	94	7.5YR 3/4	6	C	M	gr sa lo	
								sa - sand
								si - silt
								lo - loam
								gr - gravell

<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, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/>	Histosol (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 Dark Surface (TF12)
<input type="checkbox"/>	Hydrogen Sulfide (A4)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	Other (Explain in Remarks)
<input checked="" type="checkbox"/>	Depleted Below Dark Surface (A11)	<input checked="" 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.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soils Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks: This soil profile meets the criteria of hydric soil indicator A11 because of the dark surface over a depleted matrix chroma that begins within 12 inches of the soil surface

**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)
<input checked="" type="checkbox"/>	High Water Table (A2)	<input type="checkbox"/>	Water-Stained Leaves (B9) <b>(MLRA 1, 2, 4A, and 4B)</b>
<input checked="" type="checkbox"/>	Saturation (A3)	<input type="checkbox"/>	Salt Crust (B11)
<input type="checkbox"/>	Water Marks (B1)	<input type="checkbox"/>	Aquatic Invertebrates (B13)
<input type="checkbox"/>	Sediment Deposits (B2)	<input type="checkbox"/>	Hydrogen Sulfide Odor (C1)
<input type="checkbox"/>	Drift Deposits (B3)	<input type="checkbox"/>	Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/>	Algal Mat or Crust (B4)	<input type="checkbox"/>	Presence of Reduced Iron (C4)
<input type="checkbox"/>	Iron Deposits (B5)	<input type="checkbox"/>	Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/>	Surface Soil Cracks (B6)	<input type="checkbox"/>	Stunted or Stresses Plants (D1) <b>(LRR A)</b>
<input type="checkbox"/>	Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/>	Frost-Heave Hummocks (D7)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> Saturation Present? (includes capillary fringe)    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>7</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: A high water table was observed at 10 inches and soil saturation at a depth of 7 inches, so there are primary indicators present for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP5B  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland B is in the North Segment, along Service Road 1000.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	15	yes	FAC	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)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	15	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Sambucus racemosa</i></u>	15	yes	FACU	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. <u><i>Rubus spectabilis</i></u>	15	yes	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	30	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	50	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Dryopteris expansa</i></u>	10	no	FACW																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>30</u> , 20% = <u>12</u>	60	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>40</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC or FACW species.

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	_____	_____	_____	_____	_____	_____	_____	Duff
2-9	10YR 2/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
9-16	10YR 3/4	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
<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, RC=Root Channel			
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (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 Dark 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)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<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)					
<b>Restrictive Layer (if present):</b>					<b>Hydric Soils Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Type: _____								
Depth (inches): _____								
Remarks:    Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators								

**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)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>	<b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:    Water table was below 12 inches so hydrology was not present during the field visit and there was no evidence of wetland hydrology.			

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP6C  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland C is in the North Segment, along Service Road 1000.					

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																																			
1. <u><i>Alnus rubra</i></u>	20	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	3 (A)																																		
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	5 (B)																																		
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	60 (A/B)																																		
4. _____	_____	_____	_____																																				
50% = <u>10</u> , 20% = <u>4</u>	20	= Total Cover																																					
Sapling/Shrub Stratum (Plot size: 30' diameter)				<b>Prevalence Index worksheet:</b> <table style="width: 100%; border: none;"> <tr> <td colspan="2" style="text-align: center;">Total % Cover of:</td> <td colspan="2" style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">_____</td> <td>x1 =</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">_____</td> <td>x2 =</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">_____</td> <td>x3 =</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">_____</td> <td>x4 =</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">_____</td> <td>x5 =</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">_____ (A)</td> <td></td> <td style="text-align: center;">_____ (B)</td> </tr> <tr> <td colspan="4" style="text-align: center;">Prevalence Index = B/A = _____</td> <td colspan="2"></td> </tr> </table>		Total % Cover of:		Multiply by:		OBL species	_____	x1 =	_____	FACW species	_____	x2 =	_____	FAC species	_____	x3 =	_____	FACU species	_____	x4 =	_____	UPL species	_____	x5 =	_____	Column Totals:	_____ (A)		_____ (B)	Prevalence Index = B/A = _____					
Total % Cover of:		Multiply by:																																					
OBL species	_____	x1 =	_____																																				
FACW species	_____	x2 =	_____																																				
FAC species	_____	x3 =	_____																																				
FACU species	_____	x4 =	_____																																				
UPL species	_____	x5 =	_____																																				
Column Totals:	_____ (A)		_____ (B)																																				
Prevalence Index = B/A = _____																																							
1. <u><i>Rubus spectabilis</i></u>	35	yes	FAC																																				
2. <u><i>Sambucus racemosa</i></u>	10	yes	FACU																																				
3. _____	_____	_____	_____																																				
4. _____	_____	_____	_____																																				
5. _____	_____	_____	_____																																				
50% = <u>22.5</u> , 20% = <u>9</u>	45	= Total Cover																																					
Herb Stratum (Plot size: 15' diameter)				<b>Hydrophytic Vegetation Indicators:</b> <input 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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																			
1. <u><i>Polystichum munitum</i></u>	40	yes	FACU																																				
2. <u><i>Dryopteris expansa</i></u>	20	yes	FACW																																				
3. _____	_____	_____	_____																																				
4. _____	_____	_____	_____																																				
5. _____	_____	_____	_____																																				
6. _____	_____	_____	_____																																				
7. _____	_____	_____	_____																																				
8. _____	_____	_____	_____																																				
9. _____	_____	_____	_____																																				
10. _____	_____	_____	_____																																				
11. _____	_____	_____	_____																																				
50% = <u>30</u> , 20% = <u>12</u>	60	= Total Cover																																					
Woody Vine Stratum (Plot size: 15' diameter)				<b>Hydrophytic Vegetation Present?</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 10%; text-align: center;">No</td> <td style="width: 10%; text-align: center;"><input type="checkbox"/></td> </tr> </table>			Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>																													
	Yes	<input checked="" type="checkbox"/>	No			<input type="checkbox"/>																																	
1. _____	_____	_____	_____																																				
2. _____	_____	_____	_____																																				
50% = _____, 20% = _____	_____	= Total Cover																																					
% Bare Ground in Herb Stratum <u>40</u>																																							

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species



**SOIL**

<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b>								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	_____	_____	_____	_____	_____	_____	_____	Duff
2-12	10YR 2/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
12-16	10YR 4/3	95	7.5YR 4/6	5	C	M	sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
<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, RC=Root Channel								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (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 Dark 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)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<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)					
<b>Restrictive Layer (if present):</b>						<b>Hydric Soils Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Type: _____								
Depth (inches): _____								
Remarks:    Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators								

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
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)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>	<b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:    Hydrology was not present during the field visit and there was no evidence of wetland hydrology.			

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP7C  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland C is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																																																		
1. <u><i>Alnus rubra</i></u>	30	yes	FAC	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)																																																		
2. _____	_____	_____	_____																																																			
3. _____	_____	_____	_____																																																			
4. _____	_____	_____	_____																																																			
50% = <u>15</u> , 20% = <u>6</u>	30	= Total Cover																																																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																																																						
1. <u><i>Rubus spectabilis</i></u>	35	yes	FAC	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____																																			
Total % Cover of:	Multiply by:																																																					
OBL species _____	x1 = _____																																																					
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Column Totals: _____ (A)	_____ (B)																																																					
Prevalence Index = B/A = _____																																																						
2. _____	_____	_____	_____																																																			
3. _____	_____	_____	_____																																																			
4. _____	_____	_____	_____																																																			
5. _____	_____	_____	_____																																																			
50% = <u>17.5</u> , 20% = <u>7</u>	35	= Total Cover																																																				
<u>Herb Stratum (Plot size: 15' diameter)</u>																																																						
1. <u><i>Dryopteris expansa</i></u>	10	yes	FACW																																																			
2. _____	_____	_____	_____																																																			
3. _____	_____	_____	_____																																																			
4. _____	_____	_____	_____																																																			
5. _____	_____	_____	_____																																																			
6. _____	_____	_____	_____																																																			
7. _____	_____	_____	_____																																																			
8. _____	_____	_____	_____																																																			
9. _____	_____	_____	_____																																																			
10. _____	_____	_____	_____																																																			
11. _____	_____	_____	_____																																																			
50% = <u>5</u> , 20% = <u>2</u>	10	= Total Cover																																																				
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																																																						
1. _____	_____	_____	_____																																																			
2. _____	_____	_____	_____																																																			
50% = _____, 20% = _____	_____	= Total Cover																																																				
% Bare Ground in Herb Stratum <u>90</u>																																																						
<table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><b>Hydrophytic Vegetation Indicators:</b></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 30%;"></td> </tr> <tr> <td><input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> 2 - Dominance Test is &gt;50%</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> 3 - Prevalence Index is <math>\leq 3.0^1</math></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> 5 - Wetland Non-Vascular Plants<sup>1</sup></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5"><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</td> </tr> <tr> <td colspan="5"><b>Hydrophytic Vegetation Present?</b></td> </tr> <tr> <td style="text-align: center;">Yes</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">No</td> <td style="text-align: center;"><input type="checkbox"/></td> <td></td> </tr> </table>					<b>Hydrophytic Vegetation Indicators:</b>					<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation					<input checked="" type="checkbox"/> 2 - Dominance Test is >50%					<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$					<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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)					<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					<b>Hydrophytic Vegetation Present?</b>					Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
<b>Hydrophytic Vegetation Indicators:</b>																																																						
<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation																																																						
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<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																						
<b>Hydrophytic Vegetation Present?</b>																																																						
Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>																																																			

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/1	100	_____	_____	_____	_____	_____	Muck with silt
12-16	10YR 2/1	100	_____	_____	_____	_____	sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: This soil profile consists of an organic profile that is at least 8 inches thick so meets the definition of a histic epipedon and meets hydric soil indicator A2

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 8  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): surface

**Wetland Hydrology Present?** Yes  No

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

Remarks: A high water table was observed at 8 inches and soil saturation at the surface so there are primary indicators present for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP8D  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland D is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <i>Alnus rubra</i>	20	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)																
2. <i>Thuja plicata</i>	10	yes	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <i>Rubus spectabilis</i>	20	yes	FAC																	
2. <i>Sambucus racemosa</i>	10	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <i>Polystichum munitum</i>	15	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Dryopteris expansa</i>	5	yes	FACW																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>80</u>																				

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	_____	_____	_____	_____	_____	_____	_____	Duff
2-4	10YR 2/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
4-7	10YR 3/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
7-12	5YR 3/4	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
12-16	10YR 4/2	90	5YR 3/4	10	C	M	sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile most closely matches the description for hydric soil indicator F3, Depleted Matrix because the depleted matrix begins within 10 inches of the soil surface and has distinct mottling.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 10  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): surface

**Wetland Hydrology Present?** Yes  No

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

Remarks: A high water table was observed at 10" and soil saturation at the surface so there are primary indicators present for wetland hydrology. Water also seeped into the hole at 6" depth.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP9D  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland D is in the North Segment, along Service Road 1000.			

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	15	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)																
2. <u><i>Thuja plicata</i></u>	15	yes	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	30	yes	FAC	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. <u><i>Sambucus racemosa</i></u>	15	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>22.5</u> , 20% = <u>9</u>	<u>45</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	25	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Dryopteris expansa</i></u>	10	yes	FACW																	
3. <u><i>Rubus ursinus</i></u>	5	no	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>20</u> , 20% = <u>8</u>	<u>40</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum _____																				

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	_____	_____	_____	_____	_____	_____	_____	Duff
1-5	10YR 2/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
5-16	10YR 4/4	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa- sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP10E  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland E is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <i>Tsuga heterophylla</i>	15	yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <i>Gaultheria shallon</i>	10	yes	UPL																	
2. <i>Rubus spectabilis</i>	10	yes	FAC																	
3. <i>Sambucus racemosa</i>	5	yes	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <i>Polystichum munitum</i>	10	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Dryopteris expansa</i>	5	yes	FACW																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>85</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC or FACW species.



**SOIL**

Sampling Point: TP10

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	_____	_____	_____	_____	_____	_____	_____	Duff
5-10	10YR 2/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
10-16	10YR 3/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
16-20	2.5Y 3/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Water Table Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    Seepage was observed below 12 inches so hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP11E  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland E is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u>Thuja plicata</u>	10	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>67</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>5</u> , 20% = <u>2</u>	10	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>				<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u>Polystichum munitum</u>	5	yes	FACU																	
2. <u>Tolmiea menziesii</u>	5	yes	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>90</u>																				
<table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 10%; text-align: center;"><input type="checkbox"/></td> </tr> </table>				<b>Hydrophytic Vegetation Present?</b>	Yes	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>												
<b>Hydrophytic Vegetation Present?</b>	Yes	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>																

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/1	100					sa lo	no redoximorphic concentrations
5-16	2.5Y 5/1	80	7.5YR 3/4	20	C	M	sa	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile most closely matches the description for hydric soil indicator F3, Depleted Matrix because the depleted matrix begins within 10 inches of the soil surface and has distinct mottling.

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): surface

**Wetland Hydrology Present?** Yes  No

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

Remarks: Soil saturation was observed at the surface and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP12F  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland F is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	30	yes	FAC	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)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Thuja plicata</i>*</u>	2	yes	FAC																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u><i>Tolmiea menziesii</i></u>	10	yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Dryopteris expansa</i></u>	10	yes	FACW																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>80</u>																				

Remarks: \*seedlings  
 The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 2/1	100	_____	_____	_____	_____	sa si lo	Hydrogen sulfide odor
16-	10YR 2/2 <sup>1</sup>	100	_____	_____	_____	_____	sa si lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	si - silt
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

<p><b>Restrictive Layer (if present):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p><b>Hydric Soils Present?</b>                      Yes    <input checked="" type="checkbox"/>    No    <input type="checkbox"/></p>
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Remarks:    Presence of Hydrogen Sulfide odor meets indicator for A4.

**HYDROLOGY**

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

<p><b>Field Observations:</b></p> <p>Surface Water Present?    Yes    <input type="checkbox"/>    No    <input type="checkbox"/>    Depth (inches): _____</p> <p>Water Table Present?    Yes    <input type="checkbox"/>    No    <input type="checkbox"/>    Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe)    Yes    <input checked="" type="checkbox"/>    No    <input type="checkbox"/>    Depth (inches): <u>surface</u></p>	<p><b>Wetland Hydrology Present?</b>                      Yes    <input checked="" type="checkbox"/>    No    <input type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:    Soil saturation was observed at the surface and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP13F  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland F is in the North Segment, along Service Road 1000.			

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	20	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Corylus cornuta</i></u>	15	yes	FACU	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. <u><i>Rubus spectabilis</i></u>	10	yes	FAC																	
3. <u><i>Sambucus racemosa</i></u>	10	yes	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = 17.5, 20% = 7	35	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	10	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Dryopteris expansa</i></u>	1	no	FACW																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>90</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC or FACW species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	_____	_____	_____	_____	_____	_____	_____	Duff
3-7	10YR 2/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
7-16	10YR 3/4	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Histosol (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 Dark 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 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):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators

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

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Water Table Present?    Yes        No        Depth (inches): 14  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    Water table was below 12 inches so hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP 14 - G  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland G is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>					
1. <u>Rubus spectabilis</u>	10	yes	FAC	<b>Prevalence Index worksheet:</b>	
2. _____	_____	_____	_____	Total % Cover of:	Multiply by:
3. _____	_____	_____	_____	OBL species _____	x1 = _____
4. _____	_____	_____	_____	FACW species _____	x2 = _____
5. _____	_____	_____	_____	FAC species _____	x3 = _____
50% = 5, 20% = 2	10	= Total Cover		FACU species _____	x4 = _____
<u>Herb Stratum (Plot size: 15' diameter)</u>					
1. _____	_____	_____	_____	UPL species _____	x5 = _____
2. _____	_____	_____	_____	Column Totals: _____ (A)	_____ (B)
3. _____	_____	_____	_____	Prevalence Index = B/A = _____	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b>	
5. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
6. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
7. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
8. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
9. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
10. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
50% = _____, 20% = _____	_____	= Total Cover			
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>					
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species.



**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR 2/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
1-16	10GY 4/1	100	_____	_____	_____	_____	sa	contains brown organic chunks
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: This soil profile most closely matches that of a Loamy Gleyed Matrix (F2) because the layer with more than 60% gley matrix begins within 12 inches of the soil surface.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 8  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): surface

**Wetland Hydrology Present?** Yes  No

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

Remarks: A high water table was observed at 8 inches and soil saturation at the surface so there are primary indicators present for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 1/18/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP 15 - G  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar Fine sandy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland G is in the North Segment, along Service Road 1000.					

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Thuja plicata</i></u>	15	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)																
2. <u><i>Alnus rubra</i></u>	15	yes	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	30	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	10	yes	FAC																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>5</u> , 20% = <u>2</u>	10	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	50	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>25</u> , 20% = <u>10</u>	50	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>100</u>																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species.

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	_____	_____	_____	_____	_____	_____	_____	Duff
1-2	10YR 2/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
2-4	10YR 4/3	100	_____	_____	_____	_____	sa si lo	no redoximorphic concentrations
4-16	10YR 3/2	100	_____	_____	_____	_____	sa cl lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam
_____	_____	_____	_____	_____	_____	_____	_____	si - silt
_____	_____	_____	_____	_____	_____	_____	_____	cl - clay

<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, RC=Root Channel

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

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soils Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks: None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

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

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 2/10/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP 16 - H  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 0-6  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Pouslbo-Ragnar Complex, 0 to 6 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland H is in the North Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <i>Pseudotsuga menziesii</i>	75	yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0</u> (A/B)																
2. <i>Tsuga heterophylla</i>	35	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>55</u> , 20% = <u>22</u>	<u>110</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <i>Vaccinium parvifolium</i>	5	yes	FACU																	
2. <i>Gaultheria shallon</i>	1	no	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <i>Polystichum munitum</i>	5	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Rubus ursinus</i>	1	no	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>95</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is less than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	_____	_____	_____	_____	_____	_____	_____	Duff
3-6	10YR 2/2	100	_____	_____	_____	_____	sa si lo	No redoximorphic concentrations
6-16	10YR 3/2	100	_____	_____	_____	_____	sa si lo	No redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam
_____	_____	_____	_____	_____	_____	_____	_____	si - silt

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soils Present? Yes  No

Remarks: None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

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

Remarks: Hydrology was present during the field visit observed as saturation at 10 inches below the surface. However, there was no other evidence (oxidized rhizospheres, water-stained leaves) to indicate the water was due to wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 2/10/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP 16 - H  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 0-6  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo-Ragnar Complex, 0 to 6 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland H is in the North Segment, along Service Road 1000.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u>Vaccinium ovatum</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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 checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Ilex aquilinum</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 15' diameter)</u>																				
1. <u>Polystichum munitum</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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 checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Dryopteris expansa</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>																	
3. <u>Tiarella trifoliata</u>	<u>5</u>	<u>yes</u>	<u>FAC</u>																	
4. <u>Rubus ursinus</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>75</u>																				

Remarks: The wetland unit is very narrow and the vegetation was rooted in a shallow layer of duff on top of the hydric soil. As a result, upland vegetation was recorded in the wetland. The hydrophytic vegetation criterion is met because hydric soil and wetland hydrology indicators are met.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 2/1	100	_____	_____	_____	_____	sa si lo	No redoximorphic features
10-16	10YR 5/1	100	_____	_____	_____	_____	gr sa lo	No redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	si - silt
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile contains a depleted layer with dark chromas above that meet the indicator Depleted Below Dark Surface. The hydric soil criteria is met.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): surface  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Hydrology was present during the field visit observed as saturation at the surface. Therefore the wetland hydrology indicator is met.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 2/22/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP18 - I  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo-Ragnar Complex, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland I is in the South Segment, along Lower Mirkwood Trail.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b>	
1. <u><i>Alnus rubra</i></u>	<u>5</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>5</u> (A)
2. <u><i>Thuja plicata</i></u>	<u>5</u>	<u>yes</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>				<b>Prevalence Index worksheet:</b>	
1. <u><i>Rubus spectabilis</i></u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____	x5 = _____
<u>Herb Stratum (Plot size: 15' diameter)</u>				Column Totals: _____ (A)	_____ (B)
1. <u><i>Athyrium cyclosporum</i></u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. <u><i>Oenanthe sarmentosa</i></u>	<u>10</u>	<u>yes</u>	<u>OBL</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>				<b>Hydrophytic Vegetation Indicators:</b>	
1. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
2. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
50% = _____, 20% = _____	_____	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$	
% Bare Ground in Herb Stratum <u>80</u>				<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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC or OBL species.



**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: No soil hole was dug. Soil was assumed to be hydric due to presence of seasonally flowing stream.

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): 1  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Surface water was observed at a 1 inch depth and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 2/22/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP19 - I  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo-Ragnar complex, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland I is in the South Segment, along Lower Mirkwood Trail.			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 10' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																								
1. <u><i>Alnus rubra</i></u>	10	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>29</u> (A/B)																								
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
50% = <u>5</u> , 20% = <u>2</u>	10	= Total Cover																										
<u>Sapling/Shrub Stratum (Plot size: 10' diameter)</u>																												
1. <u><i>Sambucus racemosa</i></u>	10	yes	FACU	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td></td> <td style="text-align: center;">_____ (B)</td> </tr> <tr> <td colspan="3" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species _____	_____	x1 = _____	FACW species _____	_____	x2 = _____	FAC species _____	_____	x3 = _____	FACU species _____	_____	x4 = _____	UPL species _____	_____	x5 = _____	Column Totals: _____ (A)		_____ (B)	Prevalence Index = B/A = _____		
	Total % Cover of:	Multiply by:																										
OBL species _____	_____	x1 = _____																										
FACW species _____	_____	x2 = _____																										
FAC species _____	_____	x3 = _____																										
FACU species _____	_____	x4 = _____																										
UPL species _____	_____	x5 = _____																										
Column Totals: _____ (A)		_____ (B)																										
Prevalence Index = B/A = _____																												
2. <u><i>Vaccinium ovatum</i></u>	5	yes	FACU																									
3. <u><i>Gaultheria shallon</i></u>	5	yes	FACU																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
50% = <u>10</u> , 20% = <u>4</u>	20	= Total Cover																										
<u>Herb Stratum (Plot size: 10' diameter)</u>																												
1. <u><i>Rubus ursinus</i></u>	10	yes	FACU																									
2. <u><i>Polystichum munitum</i></u>	10	yes	FACU																									
3. <u><i>Dryopteris expansa</i></u>	5	yes	FACW																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
11. _____	_____	_____	_____																									
50% = <u>12.5</u> , 20% = <u>5</u>	25	= Total Cover																										
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
50% = _____, 20% = _____	_____	= Total Cover																										
% Bare Ground in Herb Stratum <u>75</u>																												

**Hydrophytic Vegetation Indicators:**

1 – Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is  $\leq 3.0^1$

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?**

Yes  No

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC or FACW species.

**SOIL**

<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b>								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 3/3	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
12-16	10yR 4/3	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (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 Dark 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)			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<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)					
<b>Restrictive Layer (if present):</b>								
Type: _____								
Depth (inches): _____					<b>Hydric Soils Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:    Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.								

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
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)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> High Water Table (A2)	<b>(except MLRA 1, 2, 4A, and 4B)</b>	<b>(MLRA 1, 2, 4A, and 4B)</b>	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) <b>(LRR A)</b>	<input type="checkbox"/> Raised Ant Mounds (D6) <b>(LRR A)</b>	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____
		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:    A high water table was observed at 3 inches and is a primary indicator for wetland hydrology.			

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 2/22/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP20 - J  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo-Ragnar Complex, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland J is in the South Segment, along Lower Mirkwood Trail.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u><i>Alnus rubra</i></u>	20	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover			
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>					
1. <u><i>Rubus spectabilis</i></u>	15	yes	FAC	<b>Prevalence Index worksheet:</b>  Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. <u><i>Thuja plicata (sapling)</i></u>	10	yes	FAC		
3. <u><i>Gaultheria shallon</i></u>	10	yes	FACU		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
50% = <u>17.5</u> , 20% = <u>7</u>	<u>35</u>	= Total Cover			
<u>Herb Stratum (Plot size: 15' diameter)</u>					
1. <u><i>Athyrium cyclosorum</i></u>	15	yes	FAC		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover			
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>85</u>					

**Hydrophytic Vegetation Indicators:**

1 – Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is  $\leq 3.0^1$

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

<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, RC=Root Channel

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Redox (S5) <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)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if present):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soils Present?</b>                      Yes    <input checked="" type="checkbox"/>    No    <input type="checkbox"/></p>
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Remarks: No soil hole was dug. Soil was assumed to be hydric due to presence of seasonally flowing stream.

**HYDROLOGY**

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

<p><b>Field Observations:</b></p> Surface Water Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> Water Table Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	<p><b>Wetland Hydrology Present?</b>                      Yes    <input checked="" type="checkbox"/>    No    <input type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface water was observed to 6 inches depth and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble Trail Feasibility City/County: Port Gamble/Kitsap Sampling Date: 2/22/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP 21 - J  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo-Ragnar Complex, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland J is in the South Segment, along Lower Mirkwood Trail.			

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																								
1. <u><i>Alnus rubra</i></u>	20	yes	FAC	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)																								
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
50% = <u>10</u> , 20% = <u>4</u>	20	= Total Cover																										
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>				<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">_____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">_____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">_____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">_____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">_____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">_____ (A)</td> <td style="text-align: center;">_____ (B)</td> </tr> <tr> <td colspan="3" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>		<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species	_____	x1 = _____	FACW species	_____	x2 = _____	FAC species	_____	x3 = _____	FACU species	_____	x4 = _____	UPL species	_____	x5 = _____	Column Totals:	_____ (A)	_____ (B)	Prevalence Index = B/A = _____		
	<u>Total % Cover of:</u>	<u>Multiply by:</u>																										
OBL species	_____	x1 = _____																										
FACW species	_____	x2 = _____																										
FAC species	_____	x3 = _____																										
FACU species	_____	x4 = _____																										
UPL species	_____	x5 = _____																										
Column Totals:	_____ (A)	_____ (B)																										
Prevalence Index = B/A = _____																												
1. <u><i>Vaccinium ovatum</i></u>	10	yes	FACU																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
50% = <u>5</u> , 20% = <u>2</u>	10	= Total Cover																										
<u>Herb Stratum (Plot size: 15' diameter)</u>																												
1. <u><i>Polystichum munitum</i></u>	10	yes	FACU																									
2. <u><i>Dryopteris expansa</i></u>	5	yes	FACW																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
11. _____	_____	_____	_____																									
50% = <u>7.5</u> , 20% = <u>3</u>	15	= Total Cover																										
<u>Woody Vine Stratum (Plot size: 15' diameter)</u>																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
50% = _____, 20% = _____	_____	= Total Cover																										
% Bare Ground in Herb Stratum <u>85</u>																												

**Hydrophytic Vegetation Indicators:**

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is  $\leq 3.0^1$
- 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants<sup>1</sup>
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC or FACW species.

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	_____	_____	_____	_____	_____	_____	_____	Duff
2-8	10YR 2/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
8-16	10YR 4/6	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam
_____	_____	_____	_____	_____	_____	_____	_____	gr - 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, RC=Root Channel

<p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Redox (S5) <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)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if present):</b>                  Type: _____                  Depth (inches): _____</p>	<p><b>Hydric Soils Present?</b>      Yes    <input type="checkbox"/>    No    <input checked="" type="checkbox"/></p>
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Remarks:    Neither of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

**HYDROLOGY**

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

<p><b>Field Observations:</b></p> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	<p><b>Wetland Hydrology Present?</b>      Yes    <input type="checkbox"/>    No    <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:    Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP1K  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Kapowsin gravelly ashy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland K is in the Central Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>50</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u>Rubus spectabilis</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u>Polystichum munitum</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>80</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species, however the wetland is a forested mosaic and the presence of sword fern (Polystichum munitum, FACU) may be restricted to upland hummocks, leaving only salmonberry (Rubus spectabilis, FAC) for wetland vegetation.



**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/2	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
4-8	7.5YR 3/4	100	_____	_____	_____	_____	gr sa lo	sulfidic odor
8-16	10YR 4/3	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: Presence of Hydrogen Sulfide odor meets indicator for A4.

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): 3  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Surface water was observed at 3 inches depth and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP2K  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Kapowsin gravelly ashy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland K is in the Central Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <i>Pseudotsuga menziesii</i>	25	yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>25</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <i>Rubus spectabilis</i>	20	yes	FAC																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <i>Polystichum munitum</i>	20	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Rubus ursinus</i>	15	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>17.5</u> , 20% = <u>7</u>	<u>35</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>65</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
4-1	7.5YR 3/4	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
10-16	7.5YR 3/3	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Water Table Present?    Yes        No        Depth (inches): 12  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    Water table was below 12 inches so hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP1L  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Kapowsin gravelly ashy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland L is in the Central Segment, along Service Road 1000.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	20	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)																
2. <u><i>Pseudotsuga menziesii</i></u>	10	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	20	yes	FAC																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	25	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Rubus ursinus</i></u>	10	yes	FACU																	
3. <u><i>Sambucus racemosa*</i></u>	5	no	FACU																	
4. <u><i>Digitalis purpurea</i></u>	I	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>20</u> , 20% = <u>8</u>	<u>40</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>65</u>																				

Remarks: \*seedlings  
 The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.

**SOIL**

Sampling Point: TP1L

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 2/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
10-14	7.5YR 4/6	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
14-16	_____	_____	_____	_____	_____	_____	_____	Charcoal
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Water Table Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP2L  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 6-15  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Kapowsin gravelly ashy loam, 6 to 15 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Wetland L is in the Central Segment, along Service Road 1000.					

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	20	yes	FAC	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)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	35	yes	FAC																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>17.5</u> , 20% = <u>7</u>	<u>35</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>100</u>																				
<table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 10%;"></td> <td style="width: 30%;"></td> </tr> <tr> <td></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td></td> </tr> </table>					<b>Hydrophytic Vegetation Present?</b>	Yes	No				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
<b>Hydrophytic Vegetation Present?</b>	Yes	No																		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 2/2	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
10-14	7.5YR 4/6	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
14-16	_____	_____	_____	_____	_____	_____	_____	Charcoal
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 6  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): Surface

**Wetland Hydrology Present?** Yes  No

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

Remarks: A high water table was observed at 6 inches and soil saturation at the surface so there are primary indicators present for wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3-24-17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP1M  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo gravelly sandy loam, 0 to 6 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in 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 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 checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks:



**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    Soil was assumed hydric due to presence of seasonal standing water during site visit.

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

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches): 36  
 Water Table Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    Surface water was observed to a depth of approximately 36 inches and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3-24-17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP1N  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo gravelly sandy loam, 0 to 6 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test Worksheet:</b>		
1. <i>Salix lucida</i>	20	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
2. <i>Thuja plicata</i>	15	yes	FAC	Total Number of Dominant Species Across All Strata:	4	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)
4. _____	_____	_____	_____			
50% = 17.5, 20% = 7	35	= Total Cover				
Sapling/Shrub Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b>		
1. <i>Vaccinium ovatum</i>	15	yes	FACU	Total % Cover of:                      Multiply by:		
2. <i>Gaultheria shallon</i>	15	yes	FACU	OBL species	_____	x1 = _____
3. _____	_____	_____	_____	FACW species	_____	x2 = _____
4. _____	_____	_____	_____	FAC species	_____	x3 = _____
5. _____	_____	_____	_____	FACU species	_____	x4 = _____
50% = 15, 20% = 6	30	= Total Cover		UPL species	_____	x5 = _____
Herb Stratum (Plot size: 10' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Column Totals:	_____ (A)	_____ (B)
1. _____	_____	_____	_____	Prevalence Index = B/A = _____		
2. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b>		
3. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation		
4. _____	_____	_____	_____	<input 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 checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
9. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
10. _____	_____	_____	_____			
11. _____	_____	_____	_____			
50% = _____, 20% = _____	_____	= Total Cover				
Woody Vine Stratum (Plot size: 10' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b>		
1. _____	_____	_____	_____	Yes	<input checked="" type="checkbox"/>	No
2. _____	_____	_____	_____		<input type="checkbox"/>	
50% = _____, 20% = _____	_____	= Total Cover				
% Bare Ground in Herb Stratum _____						
Remarks:						

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    Soil was assumed hydric due to presence of seasonal standing water during site visit.

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

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches): 36  
 Water Table Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    Surface water was observed to a depth of approximately 36 inches and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3-24-17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP1 - O  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo gravelly sandy loam, 0 to 6 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in 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 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 checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				
Remarks:																				

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    Soil was assumed hydric due to presence of seasonal standing water during site visit.

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

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches): 36  
 Water Table Present?    Yes        No        Depth (inches): \_\_\_\_\_  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    Surface water was observed to a depth of approximately 36 inches and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3-24-17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: TP1P  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Poulsbo gravelly sandy loam, 0 to 6 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<b>Sapling/Shrub Stratum (Plot size: 30' diameter)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<b>Herb Stratum (Plot size: 10' diameter)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
<b>Woody Vine Stratum (Plot size: 10' diameter)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in 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 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 checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks:

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**      Yes        No   

Remarks:      Soil was assumed hydric due to presence of seasonal standing water during site visit.

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

**Field Observations:**

Surface Water Present?    Yes        No          Depth (inches): 36  
 Water Table Present?    Yes        No          Depth (inches): \_\_\_\_\_  
 Saturation Present?  
 (includes capillary fringe)    Yes        No          Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?**      Yes        No   

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

Remarks:      Surface water was observed to a depth of approximately 36 inches and is a primary indicator for wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: UPL TP 5  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u><i>Alnus rubra</i></u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: 30' diameter)				
1. <u><i>Rubus spectabilis</i></u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	
2. <u><i>Gaultheria shallon</i></u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% = <u>25</u> , 20% = <u>10</u>	<u>50</u>	= Total Cover		
Herb Stratum (Plot size: 10' diameter)				
1. <u><i>Polystichum munitum</i></u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input 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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u><i>Rubus ursinus</i></u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	
3. <u><i>Asarum caudatum</i></u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover		
Woody Vine Stratum (Plot size: 10' diameter)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>75</u>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.



**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR 2/1	100	_____	_____	_____	_____	sa lo	no redoximorphic concentrations
1-10	7.5YR 3/6	100	_____	_____	_____	_____	gr sa lo	with charcoal
10-16	7.5YR 3/4	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                                |
| <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)                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?**                      Yes        No   

Remarks:    None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

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

**Field Observations:**

Surface Water Present?    Yes        No        Depth (inches):    2  
 Water Table Present?    Yes        No        Depth (inches):    4  
 Saturation Present?  
 (includes capillary fringe)    Yes        No        Depth (inches):    Surface

**Wetland Hydrology Present?**                      Yes        No   

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

Remarks:    A high water table was observed at 4 inches deep, surface water to 2 inches depth and soil saturation at the surface so there are primary indicators present for wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: UPL TP 6  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u><i>Alnus rubra</i></u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30' diameter)				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u><i>Rubus laciniatus</i></u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	
2. <u><i>Mahonia nervosa</i></u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
3. <u><i>Vaccinium ovata</i></u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% = <u>17.5</u> , 20% = <u>7</u>	<u>35</u>	= Total Cover		
Herb Stratum (Plot size: 10' diameter)				
1. <u><i>Elymus repens</i></u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	
2. <u><i>Rubus ursinus</i></u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	
3. <u><i>Polystichum munitum</i></u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
4. <u><i>Sambucus racemosa</i></u>	<u>I</u>	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>35</u> , 20% = <u>14</u>	<u>70</u>	= Total Cover		
Woody Vine Stratum (Plot size: 10' diameter)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>30</u>				
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input 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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	7.5YR 2.5/2	100	_____	_____	_____	_____	gr sa lo	no redoximorphic concentrations
2-11	7.5YR 4/6	100	_____	_____	_____	_____	gr sa lo	compacted
11-16	2.5Y 5/3	100	_____	_____	_____	_____	gr sa	no redoximorphic concentrations
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravel
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (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) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark 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 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.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soils Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks: This soil profile meets none of the hydric soil indicators because the underlying layer does not meet the definition of a depleted matrix and the depleted layer is not large enough and does not contain redoximorphic concentrations.

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

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: UPL TP 8  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 15-30  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar fine sandy loam, 15 to 30 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Test Plot 8 is in the North Segment, along the Connector Trail between the Lower and Upper Alignments.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	40	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)																
2. <u><i>Tsuga heterophylla</i></u>	40	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>40</u> , 20% = <u>16</u>	<u>80</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	30	yes	FAC																	
2. <u><i>Gaultheria shallon</i></u>	15	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>22.5</u> , 20% = <u>9</u>	<u>45</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	20	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>105</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>80</u>																				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	_____	_____	_____	_____	_____	_____	_____	Duff
2-3	7.5YR 3/4	100	_____	_____	_____	_____	gr sa lo	no redoximorphic features
3-16	10YR 3/6	100	_____	_____	_____	_____	gr sa lo	no redoximorphic features
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravel
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Histosol (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 Dark 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 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):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

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

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: UPL TP 9  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 15-30  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar fine sandy loam, 15 to 30 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Test Plot 9 is located in the North Segment, along the Connector Trail between the Upper and Lower Alignments.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>67</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u>Rubus spectabilis</u>	<u>55</u>	<u>yes</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Sambucus racemosa</u>	<u>5</u>	<u>no</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>30</u> , 20% = <u>12</u>	<u>60</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u>Polystichum munitum</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>80</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	_____	_____	_____	_____	_____	_____	_____	Duff
1-4	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	no redoximorphic features
4-16	10YR 4/4	100	_____	_____	_____	_____	gr sa lo	no redoximorphic features
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravel
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	lo - 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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: UPL TP 10  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 15-30  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar fine sandy loam, 15 to 30 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Test Plot 10 is located in the North Segment of the Lower Alignment, south of Wetland H.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <i>Tsuga heterophylla</i>	80	yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0</u> (A/B)																
2. <i>Thuja plicata</i>	10	no	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <i>Gaultheria shallon</i>	5	yes	FACU																	
2. <i>Vaccinium ovatum</i>	5	no	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>30</u> , 20% = <u>12</u>	<u>60</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <i>Polystichum munitum</i>	20	yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Rubus laciniatus</i>	5	yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>75</u>																				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.



**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	_____	_____	_____	_____	_____	_____	_____	Duff
1-16	10YR 4/3	100	_____	_____	_____	_____	sand	no redoximorphic features
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<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, RC=Root Channel

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: UPL TP 11  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 15-30  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar fine sandy loam, 15 to 30 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Test Plot 11 is located in the North Segment of the Lower Alignment, south of Wetland H.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Thuja plicata</i></u>	<u>80</u>	<u>yes</u>	<u>FAC</u>	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)																
2. <u><i>Salix lucida sp. lasiandra</i></u>	<u>15</u>	<u>no</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>47.5</u> , 20% = <u>19</u>			<u>95</u> = Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	<u>30</u>	<u>yes</u>	<u>FAC</u>																	
2. <u><i>Gaultheria shallon</i></u>	<u>15</u>	<u>yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>22.5</u> , 20% = <u>9</u>			<u>45</u> = Total Cover																	
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <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"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>10</u> , 20% = <u>4</u>			<u>20</u> = Total Cover																	
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____			_____ = Total Cover																	
% Bare Ground in Herb Stratum <u>80</u>																				

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 2/2	100	_____	_____	_____	_____	sa si lo	no redoximorphic features
2-3	10YR 3/4	100	_____	_____	_____	_____	sa si lo	no redoximorphic features
3-16	10YR 3/2	100	_____	_____	_____	_____	sa cl lo	no redoximorphic features
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	si - silt
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam
_____	_____	_____	_____	_____	_____	_____	_____	cl - clay

<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, RC=Root Channel

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

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

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

Project Site: Port Gamble City/County: Port Gamble/Kitsap Sampling Date: 3/24/17  
 Applicant/Owner: Fischer Bouma Partnership State: WA Sampling Point: UPL TP 12  
 Investigator(s): J. Bartlett, L. Westervelt, K. Boa Section, Township, Range: S7 T27N R2E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 15-30  
 Subregion (LRR): MLRA 2 Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: Trimble  
 Soil Map Unit Name: Ragnar fine sandy loam, 15 to 30 percent slopes NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The scope of this feasibility encompasses a section about 6 miles long extending between Port Gamble at the north end and Stottlemeyer Road NE at the south end. It passes primarily through undeveloped timberland owned by OPG; most of which is woven with interlacing logging roads due to historic and current logging practices, and a large system of trails utilized by walkers, bikers, and equestrian hobbyists weave between the logging roads. Test Plot 12 is located in the North Segment of the Lower Alignment, south of Wetland H.					

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	<u>80</u>	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>40</u> , 20% = <u>16</u>	<u>80</u>	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: 30' diameter)</u>																				
1. <u><i>Rubus spectabilis</i></u>	<u>15</u>	yes	FAC	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. <u><i>Vaccinium ovatum</i></u>	<u>5</u>	yes	FACU																	
3. <u><i>Ilex aquilinum</i></u>	<u>5</u>	yes	UPL																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u><i>Rubus laciniatus</i></u>	<u>20</u>	yes	FACU																	
2. <u><i>Carex spp.</i></u>	<u>5</u>	yes	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>75</u>																				
<table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes <input type="checkbox"/></td> <td style="width: 10%;">No <input checked="" type="checkbox"/></td> </tr> </table>					<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>													
<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>																		

Remarks: The hydrophytic vegetation criterion is not met because there is not greater than 50% dominance by FAC species.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 2/2	100	_____	_____	_____	_____	sa si lo	no redoximorphic features
3-5	_____	_____	_____	_____	_____	_____	_____	Charcoal
5-16	10YR 4/3	95	7.5YR 4/6	5	C	M	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	sa - sand
_____	_____	_____	_____	_____	_____	_____	_____	si - silt
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam
_____	_____	_____	_____	_____	_____	_____	_____	gr - 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, RC=Root Channel

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

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: None of the soil layers meet the definition of a depleted matrix so this soil profile is determined to meet none of the hydric soil indicators.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stresses Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

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

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

## **APPENDIX B**

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Wetland name or number Wetland A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 1/17/17

Rated by Katie Boa Trained by Ecology? Yes  No  Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?  Y  X  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H  
 8 = H,H,M  
 7 = H,H,L  
 7 = H,M,M  
 6 = H,M,L  
 6 = M,M,M  
 5 = H,L,L  
 5 = M,M,L  
 4 = M,L,L  
 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland A

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	9
Hydroperiods	H 1.2	9
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	9
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	9
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	9
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland A

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**SLOPE WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>1</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		<b>0</b>
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>0</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>1</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>0</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>3</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number Wetland A

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants 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 > 1/8 in), or dense enough, to remain erect during surface flows.*  
 Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1  
 All other conditions points = 0

**0**

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0

**0**

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:  
 The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2  
 Surface flooding problems are in a sub-basin farther down-gradient points = 1  
 No flooding problems anywhere downstream points = 0

**1**

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

**0**

Total for S 6 Add the points in the boxes above

**1**

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>0</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

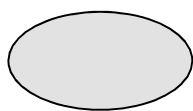
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

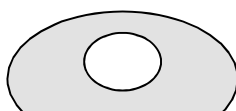
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

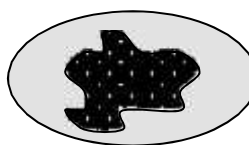
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



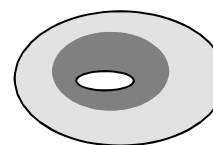
None = 0 points



Low = 1 point

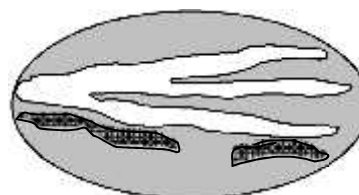
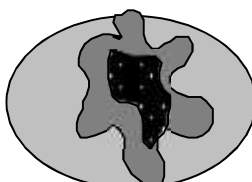
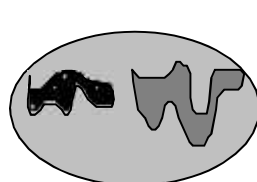


Moderate = 2 points



**1**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number Wetland A

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>1</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>4</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M     < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H X 1 = M 0 = L *Record the rating on the first page*

Wetland name or number Wetland A

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	Cat. I  Cat. II
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	Cat. I
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	Cat. I



<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland A

Wetland name or number Wetland B

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 1/17/17

Rated by Katie Boa Trained by Ecology? Yes X No    Date of training 11/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes?   Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY III** (based on functions X or special characteristics   )

### 1. Category of wetland based on FUNCTIONS

   Category I – Total score = 23 – 27

   Category II – Total score = 20 – 22

X Category III – Total score = 16 – 19

   Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	<u>H</u> M L	H <u>M</u> L	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>18</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland B

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	9
Hydroperiods	D 1.4, H 1.2	9
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	9
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	9
Map of the contributing basin	D 4.3, D 5.3	15
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	17

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** - go to 2

**YES** - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** - go to 3

**YES** - The wetland class is **Flats**

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** - go to 4

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

**NO** - go to 5

**YES** - The wetland class is **Slope**

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

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

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

The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland B

**NO** – go to 6

**YES** – The wetland class is **Riverine**

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

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number Wetland B

**DEPRESSIONAL AND FLATS WETLANDS**

**Water Quality Functions** - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?

D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	<b>2</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0	<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0	<b>3</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	<b>2</b>
Total for D 1	Add the points in the boxes above <b>7</b>

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	<b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	<b>0</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?	Yes = 1 No = 0	<b>0</b>
Source	Yes = 1 No = 0	
Total for D 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M X 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	<b>2</b>
Total for D 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L Record the rating on the first page

Wetland name or number Wetland B

**DEPRESSIONAL AND FLATS WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	<b>2</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
<b>D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</b>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	<b>5</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
<b>D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</b>		
The area of the basin is less than 10 times the area of the unit	points = 5	<b>5</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
<b>Total for D 4</b>	<b>Add the points in the boxes above</b>	<b>12</b>

**Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L *Record the rating on the first page*

<b>D 5.0. Does the landscape have the potential to support hydrologic functions of the site?</b>		
<b>D 5.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 No = 0	<b>0</b>
<b>D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?</b>	Yes = 1 No = 0	<b>0</b>
<b>D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?</b>	Yes = 1 No = 0	<b>0</b>
<b>Total for D 5</b>	<b>Add the points in the boxes above</b>	<b>0</b>

**Rating of Landscape Potential** If score is: \_\_\_ 3 = H \_\_\_ 1 or 2 = M X 0 = L *Record the rating on the first page*

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</b>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	<b>1</b>
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
<b>D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?</b>		
	Yes = 2 No = 0	<b>0</b>
<b>Total for D 6</b>	<b>Add the points in the boxes above</b>	<b>1</b>

**Rating of Value** If score is: \_\_\_ 2-4 = H X 1 = M \_\_\_ 0 = L *Record the rating on the first page*



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input checked="" type="checkbox"/> Permanently flooded or inundated                          | 4 or more types present: points = 3 | <b>2</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                           | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

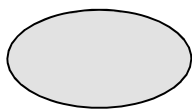
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

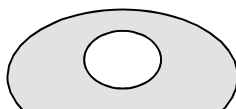
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

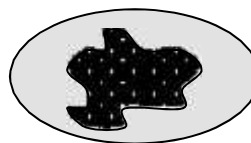
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



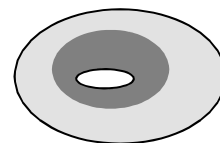
**None** = 0 points



**Low** = 1 point

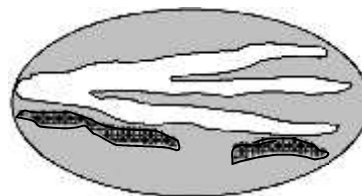
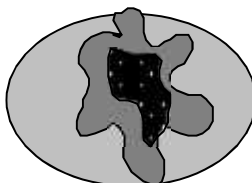
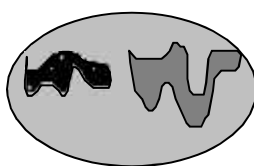


**Moderate** = 2 points



**1**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number Wetland B

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>4</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>9</b></p>

**Rating of Site Potential** If score is:      15-18 = H   X   7-14 = M      0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i>           % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i>           % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is:      4-6 = H   X   1-3 = M      < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p>— It has 3 or more priority habitats within 100 m (see next page)</p> <p>— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p>— It is mapped as a location for an individual WDFW priority species</p> <p>— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p>— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
--	--

**Rating of Value** If score is:      2 = H   X   1 = M      0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

\_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

\_\_\_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

\_\_\_ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

\_\_\_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

Ξ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

Ξ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

\_\_\_ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).

\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

\_\_\_ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

\_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>            Does the wetland meet the following criteria for Estuarine wetlands?            — The dominant water regime is tidal,            — Vegetated, and            — With a salinity greater than 0.5 ppt</p> <p style="text-align: right;">Yes –Go to <b>SC 1.1</b>    <b>No = Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	Cat. I
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?            — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)            — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.            — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	Cat. I  Cat. II
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>            SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?            SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?            SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>            SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;">Yes – Go to <b>SC 2.2</b>    <b>No – Go to SC 2.3</b>            Yes = <b>Category I</b>    No = <b>Not a WHCV</b>            Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <b>No = Not a WHCV</b>            Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	Cat. I
<p><b>SC 3.0. Bogs</b>            Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?            SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?            SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.            SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: right;">Yes – Go to <b>SC 3.3</b>    <b>No – Go to SC 3.2</b>            Yes – Go to <b>SC 3.3</b>    <b>No = Is not a bog</b>            Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b>            Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	Cat. I

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland B

Wetland name or number Wetland C

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland C Date of site visit: 1/17/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?     Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland C

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	10
Hydroperiods	H 1.2	10
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	10
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	10
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	10
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland C

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

<b>SLOPE WETLANDS</b>		
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>1</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>2</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>3</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number Wetland C

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

<p>S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i>                  Dense, uncut, <b>rigid</b> plants cover &gt; 90% of the area of the wetland points = 1                  All other conditions points = 0</p>	<b>0</b>
---	----------

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

<p>S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0</p>	<b>0</b>
---	----------

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?

<p>S 6.1. Distance to the nearest areas downstream that have flooding problems:                  The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2                  Surface flooding problems are in a sub-basin farther down-gradient points = 1                  No flooding problems anywhere downstream points = 0</p>	<b>1</b>
--	----------

<p>S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0</p>	<b>0</b>
--	----------

<p>Total for S 6 Add the points in the boxes above</p>	<b>1</b>
--	----------

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

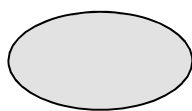
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

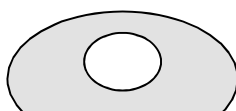
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

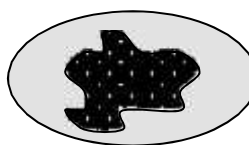
Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



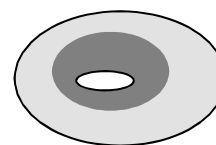
None = 0 points



Low = 1 point

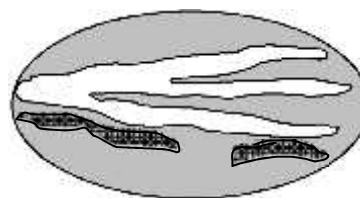
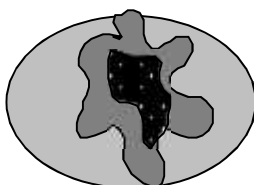
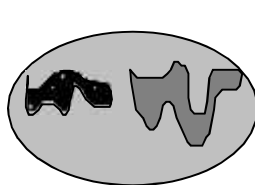


Moderate = 2 points



**1**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number Wetland C

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>1</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>5</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M     < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H X 1 = M 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>                      Does the wetland meet the following criteria for Estuarine wetlands?                      — The dominant water regime is tidal,                      — Vegetated, and                      — With a salinity greater than 0.5 ppt                      Yes – Go to <b>SC 1.1</b>    <b>No = Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?                      Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	<b>Cat. I</b>
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?                      — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)                      — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.                      — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.                      Yes = <b>Category I</b>    No = <b>Category II</b></p>	<b>Cat. I</b>  <b>Cat. II</b>
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 2.2</b>    <b>No – Go to SC 2.3</b>                      SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b>    No = <b>Not a WHCV</b>                      SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <b>No = Not a WHCV</b>                      SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?                      Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Bogs</b>                      Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i>                      SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?                      Yes – Go to <b>SC 3.3</b>    <b>No – Go to SC 3.2</b>                      SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                      Yes – Go to <b>SC 3.3</b>    <b>No = Is not a bog</b>                      SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?                      Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b>  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.                      SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?                      Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	<b>Cat. I</b>



<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland C

Wetland name or number Wetland D

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland D Date of site visit: 1/17/17

Rated by Katie Boa Trained by Ecology? Yes  No  Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?  Y  X  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland D

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	10
Hydroperiods	H 1.2	10
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	10
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	10
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	10
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland D

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**SLOPE WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>0</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		<b>0</b>
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>2</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>2</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number Wetland D

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i> Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	<b>0</b>

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	<b>0</b>

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	<b>1</b>
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	<b>0</b>
Total for S 6 Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

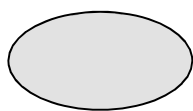
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

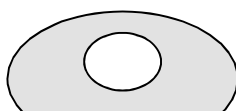
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



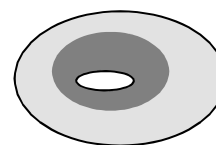
**None** = 0 points



**Low** = 1 point

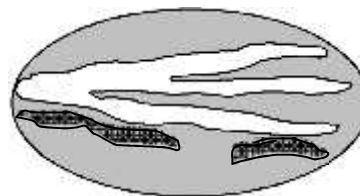
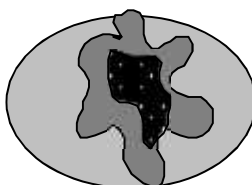
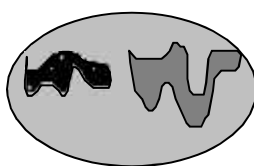


**Moderate** = 2 points



**1**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number Wetland D

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>1</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>5</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <input type="text"/> + [(% moderate and low intensity land uses)/2] <input type="text"/> = <input type="text"/> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <input type="text"/> + [(% moderate and low intensity land uses)/2] <input type="text"/> = <input type="text"/> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H X 1 = M 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>                      Does the wetland meet the following criteria for Estuarine wetlands?                      — The dominant water regime is tidal,                      — Vegetated, and                      — With a salinity greater than 0.5 ppt                      Yes – Go to <b>SC 1.1</b>    <b>No = Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?                      Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	<b>Cat. I</b>
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?                      — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)                      — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.                      — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.                      Yes = <b>Category I</b>    No = <b>Category II</b></p>	<b>Cat. I</b>  <b>Cat. II</b>
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 2.2</b>    <b>No – Go to SC 2.3</b>                      SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b>    No = <b>Not a WHCV</b>                      SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <b>No = Not a WHCV</b>                      SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?                      Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Bogs</b>                      Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i>                      SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?                      Yes – Go to <b>SC 3.3</b>    <b>No – Go to SC 3.2</b>                      SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                      Yes – Go to <b>SC 3.3</b>    <b>No = Is not a bog</b>                      SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?                      Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b>  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.                      SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?                      Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	<b>Cat. I</b>

Wetland name or number Wetland D

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland D

Wetland name or number Wetland E

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland E Date of site visit: 1/17/17

Rated by Katie Boa Trained by Ecology? Yes  No  Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?  Y  X  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland E

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	10
Hydroperiods	H 1.2	10
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	10
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	10
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	10
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland E

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

<b>SLOPE WETLANDS</b>		
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>0</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>2</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>2</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number Wetland E

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i> Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	<b>0</b>

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	<b>0</b>

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	<b>1</b>
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	<b>0</b>
Total for S 6 Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

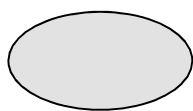
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

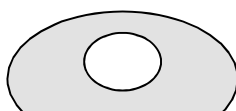
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

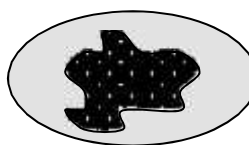
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



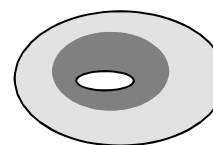
None = 0 points



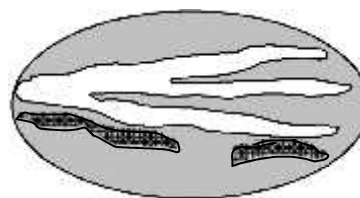
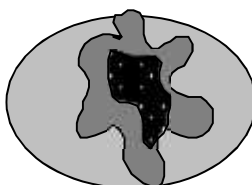
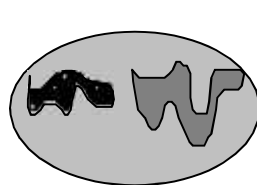
Low = 1 point



Moderate = 2 points



All three diagrams in this row are **HIGH** = 3points



**1**

Wetland name or number Wetland E

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>2</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>6</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M     < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	<b>2</b>
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**Rating of Value** If score is: 2 = H X 1 = M 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>                      Does the wetland meet the following criteria for Estuarine wetlands?                      — The dominant water regime is tidal,                      — Vegetated, and                      — With a salinity greater than 0.5 ppt                      Yes – Go to <b>SC 1.1</b>    <b>No = Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?                      Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	<b>Cat. I</b>
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?                      — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)                      — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.                      — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.                      Yes = <b>Category I</b>    No = <b>Category II</b></p>	<b>Cat. I</b>  <b>Cat. II</b>
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 2.2</b>    <b>No – Go to SC 2.3</b>                      SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b>    No = <b>Not a WHCV</b>                      SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <b>No = Not a WHCV</b>                      SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?                      Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Bogs</b>                      Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i>                      SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?                      Yes – Go to <b>SC 3.3</b>    <b>No – Go to SC 3.2</b>                      SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                      Yes – Go to <b>SC 3.3</b>    <b>No = Is not a bog</b>                      SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?                      Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b>  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.                      SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?                      Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	<b>Cat. I</b>



<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland E

Wetland name or number Wetland F

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland F Date of site visit: 1/17/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?      Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland F

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	10
Hydroperiods	H 1.2	10
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	10
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	10
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	10
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland F

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

<b>SLOPE WETLANDS</b>		
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>0</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>2</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>2</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number Wetland F

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

<p>S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i>                  Dense, uncut, <b>rigid</b> plants cover &gt; 90% of the area of the wetland points = 1                  All other conditions points = 0</p>	<b>0</b>
---	----------

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

<p>S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0</p>	<b>0</b>
---	----------

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?

<p>S 6.1. Distance to the nearest areas downstream that have flooding problems:                  The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2                  Surface flooding problems are in a sub-basin farther down-gradient points = 1                  No flooding problems anywhere downstream points = 0</p>	<b>1</b>
--	----------

<p>S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0</p>	<b>0</b>
--	----------

<p>Total for S 6 Add the points in the boxes above</p>	<b>1</b>
--	----------

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

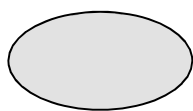
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

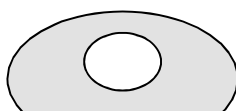
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



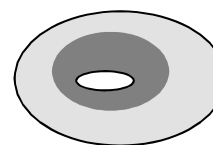
**None** = 0 points



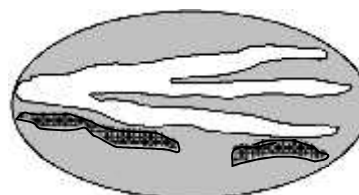
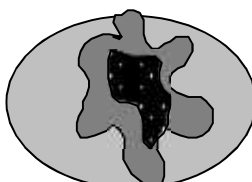
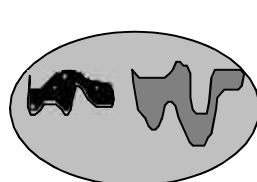
**Low** = 1 point



**Moderate** = 2 points



All three diagrams in this row are **HIGH** = 3points



**1**

Wetland name or number Wetland F

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>5</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>5</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <input type="text"/> + [(% moderate and low intensity land uses)/2] <input type="text"/> = <input type="text"/> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <input type="text"/> + [(% moderate and low intensity land uses)/2] <input type="text"/> = <input type="text"/> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	<b>2</b>
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**Rating of Value** If score is: 2 = H X 1 = M 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	Cat. I  Cat. II
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	Cat. I
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	Cat. I

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland F

Wetland name or number Wetland G

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland G Date of site visit: 1/17/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?      Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H <u>M</u> L	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland G

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	11
Hydroperiods	H 1.2	11
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	11
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	11
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	11
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland G

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

<b>SLOPE WETLANDS</b>		
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>0</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>0</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>0</b>

**Rating of Site Potential** If score is:    12 = H    6-11 = M    X 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>1</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>1</b>

**Rating of Landscape Potential** If score is:    X 1-2 = M    0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is:    X 2-4 = H    1 = M    0 = L

Record the rating on the first page

Wetland name or number Wetland G

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i> Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	<b>0</b>

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	<b>0</b>

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	<b>1</b>
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	<b>0</b>
Total for S 6 Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>0</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

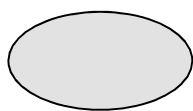
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

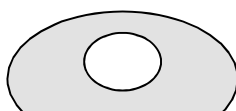
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

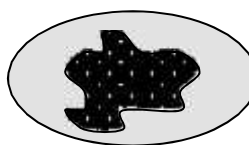
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



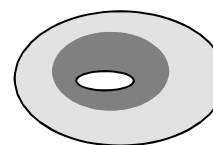
None = 0 points



Low = 1 point

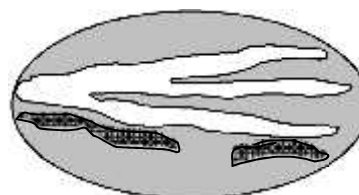
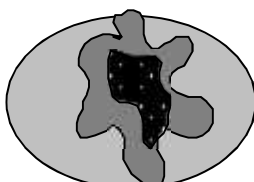
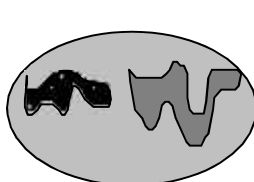


Moderate = 2 points



**1**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number Wetland G

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>1</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>4</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M     < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H X 1 = M 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	Cat. I  Cat. II
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	Cat. I
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	Cat. I



<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland G

Wetland name or number Wetland H

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland H Date of site visit: 2/10/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?      Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland H

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	11
Hydroperiods	H 1.2	11
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	11
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	11
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	11
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	15
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland H

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**SLOPE WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>1</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		<b>0</b>
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>1</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>2</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number Wetland H

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i> Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	<b>0</b>

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	<b>0</b>

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	<b>1</b>
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	<b>0</b>
Total for S 6 Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

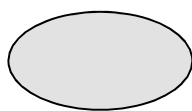
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

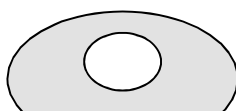
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



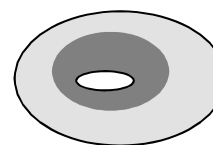
None = 0 points



Low = 1 point

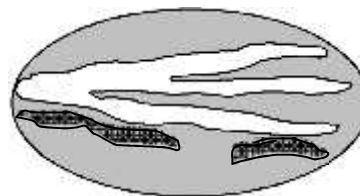
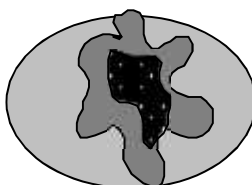
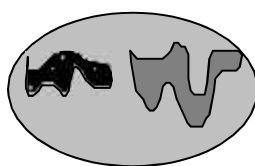


Moderate = 2 points



**0**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number Wetland H

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>1</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>4</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H X 1 = M 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

**Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

**Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).

**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

**Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

**Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).

**Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).

**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

**Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).

**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

**Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

**Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	Cat. I  Cat. II
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	Cat. I
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	Cat. I



Wetland name or number Wetland H

Wetland name or number Wetland I

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland I Date of site visit: 2/22/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?     Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland I

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	12
Hydroperiods	H 1.2	12
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	12
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	12
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	12
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland I

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number Wetland I

<b>SLOPE WETLANDS</b>		
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>1</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>0</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>1</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>0</b>
Total for S 3	Add the points in the boxes above	<b>2</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number Wetland I

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i> Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland All other conditions	<b>0</b>

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?	<b>0</b>

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	<b>1</b>
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	<b>0</b>
Total for S 6	<b>1</b>

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>2</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated                         | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

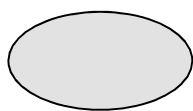
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

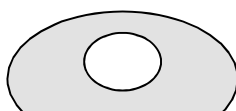
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

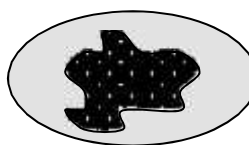
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



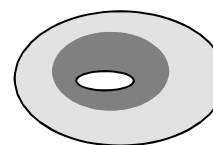
None = 0 points



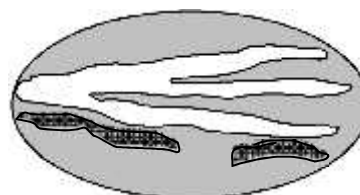
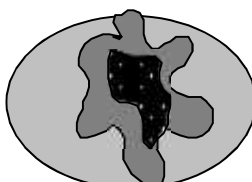
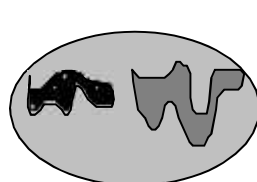
Low = 1 point



Moderate = 2 points



All three diagrams in this row are **HIGH** = 3points



**1**

Wetland name or number Wetland I

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>1</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>6</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M     < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
<p><b>Rating of Value</b> If score is: <u>2 = H</u> <u>X 1 = M</u> <u>0 = L</u></p>	<p><i>Record the rating on the first page</i></p>

Wetland name or number Wetland I

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

**Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

**Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).

**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

**Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

**Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).

**Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).

**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

**Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).

**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

**Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

**Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	<b>Cat. I</b>
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	<b>Cat. I</b>  <b>Cat. II</b>
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwtlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwtlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	<b>Cat. I</b>
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	<b>Cat. I</b>



<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland I

Wetland name or number Wetland J

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland J Date of site visit: 2/22/17

Rated by Katie Boa Trained by Ecology? Yes  No  Date of training 11/16

HGM Class used for rating Slope Wetland has multiple HGM classes?  Y  X  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <u>L</u>	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland J

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	12
Hydroperiods	H 1.2	12
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	12
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	12
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	12
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	17

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO** – Saltwater Tidal Fringe (Estuarine)

**YES** – Freshwater Tidal Fringe

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** – go to 3

**YES** – The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

**YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

**NO** – go to 5

**YES** – The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland J

NO – go to 6

**YES** – The wetland class is **Riverine** **NOTE:**

The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

<b>SLOPE WETLANDS</b>		
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i>		
Slope is 1% or less	points = 3	<b>0</b>
Slope is > 1%-2%	points = 2	
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic <i>(use NRCS definitions)</i> : Yes = 3 No = 0		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i>		
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	<b>0</b>
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	<b>0</b>

**Rating of Site Potential** If score is: 12 = H 6-11 = M X 0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?		
	Yes = 1 No = 0	<b>0</b>
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		
Other sources	Yes = 1 No = 0	<b>0</b>
Total for S 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 1-2 = M X 0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
	Yes = 1 No = 0	<b>1</b>
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i>		
	Yes = 1 No = 0	<b>1</b>
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i>		
	Yes = 2 No = 0	<b>2</b>
Total for S 3	Add the points in the boxes above	<b>4</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number Wetland J

**SLOPE WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants 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 > 1/8 in), or dense enough, to remain erect during surface flows.*  
 Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1  
 All other conditions points = 0

**0**

**Rating of Site Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0

**0**

**Rating of Landscape Potential** If score is:    1 = M   X   0 = L

*Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:  
 The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2  
 Surface flooding problems are in a sub-basin farther down-gradient points = 1  
 No flooding problems anywhere downstream points = 0

**1**

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

**0**

Total for S 6 Add the points in the boxes above

**1**

**Rating of Value** If score is:    2-4 = H   X   1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |   |                                     |          |
|---|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                     | 4 or more types present: points = 3 | <b>1</b> |
| <input type="checkbox"/> Seasonally flooded or inundated                                      | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                    | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only  | 1 type present: points = 0          |          |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland  |                                     |          |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland |                                     |          |
| <input type="checkbox"/> <b>Lake Fringe wetland</b>   | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                      | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

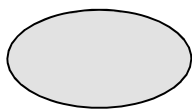
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

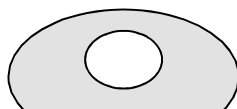
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

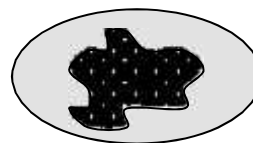
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



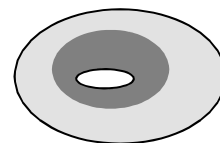
**None** = 0 points



**Low** = 1 point

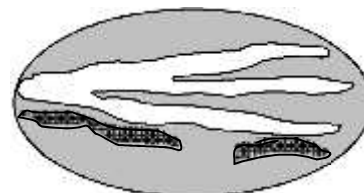
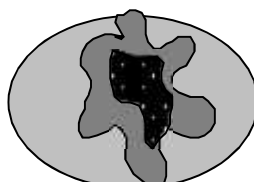
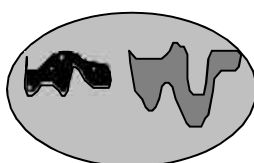


**Moderate** = 2 points



**1**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number Wetland J

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>1</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>5</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>2</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> %</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>2</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M     < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
<p><b>Rating of Value</b> If score is: <u>2 = H</u> <u>X 1 = M</u> <u>0 = L</u></p>	<p><i>Record the rating on the first page</i></p>

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	Cat. I  Cat. II
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	Cat. I
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	Cat. I

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b>          If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland J

Wetland name or number Wetland K

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland K Date of site visit: 3/24/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Depressional Wetland has multiple HGM classes?     Y X     N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	H <u>M</u> L	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H M <u>L</u>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland K

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	13
Hydroperiods	D 1.4, H 1.2	13
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	13
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	13
Map of the contributing basin	D 4.3, D 5.3	13
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	17

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

**NO** - go to 2

**YES** - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

**NO** - go to 3

**YES** - The wetland class is **Flats**

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** - go to 4

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

The water leaves the wetland **without being impounded**.

**NO** - go to 5

**YES** - The wetland class is **Slope**

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

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

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

The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland K

**NO** – go to 6

**YES** – The wetland class is **Riverine**

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

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**DEPRESSIONAL AND FLATS WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	<b>2</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	<b>5</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	<b>2</b>
Total for D 1	Add the points in the boxes above	<b>9</b>

**Rating of Site Potential** If score is:     12-16 = H   X   6-11 = M     0-5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	<b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	<b>0</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source	Yes = 1 No = 0	<b>0</b>
Total for D 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is:     3 or 4 = H     1 or 2 = M   X   0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	<b>0</b>
Total for D 3	Add the points in the boxes above	<b>2</b>

**Rating of Value** If score is:   X   2-4 = H     1 = M     0 = L Record the rating on the first page

**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	<b>2</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	<b>3</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	<b>3</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4

Add the points in the boxes above

**10****Rating of Site Potential** If score is:     12-16 = H   X   6-11 = M     0-5 = L*Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

**0**

D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0

**0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0

**0**

Total for D 5

Add the points in the boxes above

**0****Rating of Landscape Potential** If score is:     3 = H     1 or 2 = M   X   0 = L*Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
  - Surface flooding problems are in a sub-basin farther down-gradient. points = 1
- Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland. points = 0

**1**

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

**0**

Total for D 6

Add the points in the boxes above

**1****Rating of Value** If score is:     2-4 = H   X   1 = M     0 = L*Record the rating on the first page*

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |  |                                     |          |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 | <b>1</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                          | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                   | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <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</b>  | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                     | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

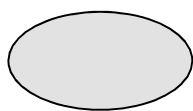
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

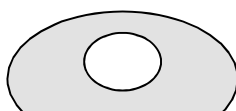
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

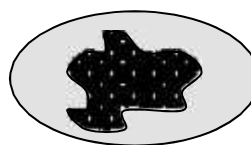
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



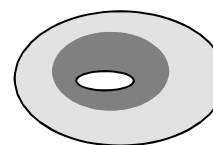
**None = 0 points**



**Low = 1 point**

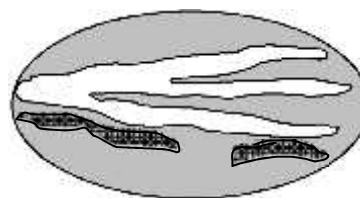
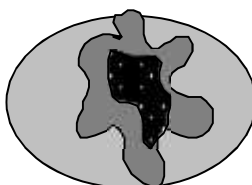
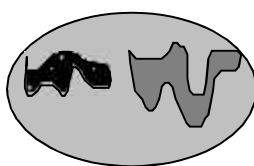


**Moderate = 2 points**



**0**

All three diagrams in this row are **HIGH = 3 points**



Wetland name or number Wetland K

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>2</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>5</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>3</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>3</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H 1 = M X 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

\_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

\_\_\_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

\_\_\_ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

\_\_\_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

\_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

\_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

\_\_\_ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).

\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

\_\_\_ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

\_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>                      Does the wetland meet the following criteria for Estuarine wetlands?                      — The dominant water regime is tidal,                      — Vegetated, and                      — With a salinity greater than 0.5 ppt</p>	
Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p>	Cat. I
Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?                      — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)                      — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.                      — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	Cat. I  Cat. II
Yes = <b>Category I</b> No = <b>Category II</b>	
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p>	Cat. I
Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> Yes = <b>Category I</b> No = <b>Not a WHCV</b> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> Yes = <b>Category I</b> No = <b>Not a WHCV</b>	
<p><b>SC 3.0. Bogs</b>                      Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i>                      SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?                      SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                      SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.                      SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p>	Cat. I
Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	



Wetland name or number Wetland K

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland K

Wetland name or number Wetland L

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland L Date of site visit: 3/24/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Depressional Wetland has multiple HGM classes?     Y X     N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	H <u>M</u> L	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	<u>H</u> M L	H <u>M</u> L	H M <u>L</u>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland L

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	13
Hydroperiods	D 1.4, H 1.2	13
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	13
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	13
Map of the contributing basin	D 4.3, D 5.3	16
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	17

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

NO - go to 2

**YES** - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

NO - go to 3

**YES** - The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

NO - go to 5

**YES** - The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland L

**NO** – go to 6

**YES** – The wetland class is **Riverine**

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

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**DEPRESSIONAL AND FLATS WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	<b>2</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	<b>5</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	<b>2</b>
Total for D 1	Add the points in the boxes above	<b>9</b>

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	<b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	<b>0</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source	Yes = 1 No = 0	<b>0</b>
Total for D 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M X 0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	<b>0</b>
Total for D 3	Add the points in the boxes above	<b>2</b>

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L Record the rating on the first page

**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	<b>2</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	<b>3</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	<b>3</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4

Add the points in the boxes above

**10****Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

**0**

D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0

**0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0

**0**

Total for D 5

Add the points in the boxes above

**0****Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M X 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
  - Surface flooding problems are in a sub-basin farther down-gradient. points = 1
- Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland. points = 0

**1**

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

**0**

Total for D 6

Add the points in the boxes above

**1****Rating of Value** If score is: 2-4 = H X 1 = M 0 = L

Record the rating on the first page



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |  |                                  |          |
|--|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed   | 4 structures or more: points = 4 | <b>1</b> |
| <input type="checkbox"/> Emergent  | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)   | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)  | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>   |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |  |                                     |          |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 | <b>1</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                          | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                   | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <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</b>  | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                     | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

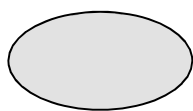
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

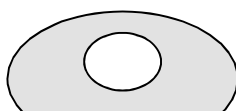
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



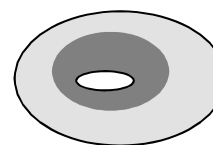
**None = 0 points**



**Low = 1 point**

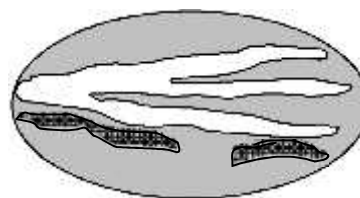
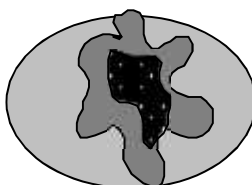
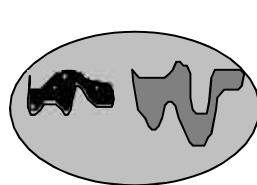


**Moderate = 2 points**



**1**

All three diagrams in this row are **HIGH = 3 points**



Wetland name or number Wetland L

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>2</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>6</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>3</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>3</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H 1 = M X 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- \_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- \_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- \_\_\_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- \_\_\_ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- \_\_\_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- \_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- \_\_\_ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- \_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- \_\_\_ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- \_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- \_\_\_ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- \_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- \_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>            Does the wetland meet the following criteria for Estuarine wetlands?            — The dominant water regime is tidal,            — Vegetated, and            — With a salinity greater than 0.5 ppt</p> <p style="text-align: right;">Yes –Go to <b>SC 1.1</b>    <b>No = Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	Cat. I
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?            — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)            — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.            — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	Cat. I  Cat. II
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>            SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?            SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?            SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>            SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;">Yes – Go to <b>SC 2.2</b>    <b>No – Go to SC 2.3</b>            Yes = <b>Category I</b>    No = <b>Not a WHCV</b>            Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <b>No = Not a WHCV</b>            Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	Cat. I
<p><b>SC 3.0. Bogs</b>            Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?            SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?            SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.            SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: right;">Yes – Go to <b>SC 3.3</b>    <b>No – Go to SC 3.2</b>            Yes – Go to <b>SC 3.3</b>    <b>No = Is not a bog</b>            Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b>            Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	Cat. I

Wetland name or number Wetland L

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland L

Wetland name or number Wetland M

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland M Date of site visit: 3/24/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Depressional Wetland has multiple HGM classes?     Y X     N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	<u>H</u> M L	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	H <u>M</u> L	H <u>M</u> L	H M <u>L</u>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland M

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	14
Hydroperiods	D 1.4, H 1.2	14
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	14
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	14
Map of the contributing basin	D 4.3, D 5.3	16
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	17

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

NO - go to 2

**YES** - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

NO - go to 3

**YES** - The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

NO - go to 5

**YES** - The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland M

**NO** – go to 6

**YES** – The wetland class is **Riverine**

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

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**DEPRESSIONAL AND FLATS WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	<b>3</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	<b>1</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	<b>4</b>
Total for D 1	Add the points in the boxes above	<b>8</b>

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	<b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	<b>0</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source	Yes = 1 No = 0	<b>0</b>
Total for D 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M X 0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	<b>0</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	<b>0</b>
Total for D 3	Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is: 2-4 = H X 1 = M 0 = L Record the rating on the first page

**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	<b>4</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	<b>3</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	<b>5</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4

Add the points in the boxes above

**12****Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

**0**

D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

**0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?

Yes = 1 No = 0

**0**

Total for D 5

Add the points in the boxes above

**0****Rating of Landscape Potential** If score is: \_\_\_ 3 = H \_\_\_ 1 or 2 = M X 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
  - Surface flooding problems are in a sub-basin farther down-gradient. points = 1
- Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland. points = 0

**1**

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

**0**

Total for D 6

Add the points in the boxes above

**1****Rating of Value** If score is: \_\_\_ 2-4 = H X 1 = M \_\_\_ 0 = L

Record the rating on the first page

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>0</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |  |                                     |          |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 | <b>1</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                          | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                   | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <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</b>  | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                     | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

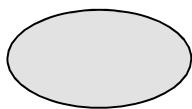
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

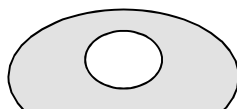
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

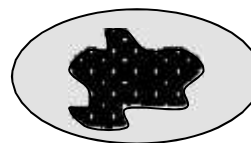
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



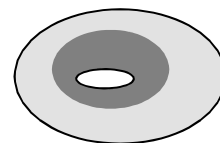
**None = 0 points**



**Low = 1 point**

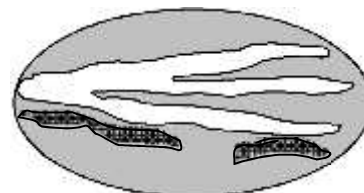
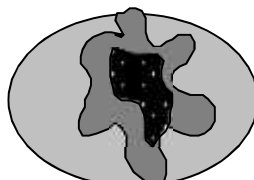
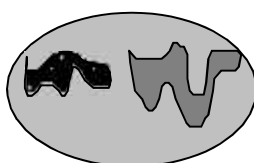


**Moderate = 2 points**



**1**

All three diagrams in this row are **HIGH = 3 points**



Wetland name or number Wetland M

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input checked="" type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>3</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>6</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>3</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>3</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

- Site meets ANY of the following criteria: points = 2
- It has 3 or more priority habitats within 100 m (see next page)
- It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- It is mapped as a location for an individual WDFW priority species
- It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan
- Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1
- Site does not meet any of the criteria above points = 0

**Rating of Value** If score is: 2 = H 1 = M X 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

\_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

\_\_\_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

\_\_\_ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

\_\_\_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

\_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

\_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

\_\_\_ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).

\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

\_\_\_ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

\_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	<b>Cat. I</b>
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	<b>Cat. I</b>  <b>Cat. II</b>
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	<b>Cat. I</b>
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	<b>Cat. I</b>



Wetland name or number Wetland M

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland M

Wetland name or number Wetland N

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland N Date of site visit: 3/24/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Depressional Wetland has multiple HGM classes?      Y X N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	<u>H</u> M L	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	H <u>M</u> L	H <u>M</u> L	H M <u>L</u>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland N

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	14
Hydroperiods	D 1.4, H 1.2	14
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	14
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	14
Map of the contributing basin	D 4.3, D 5.3	16
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	17

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

NO - go to 2

YES - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

NO - go to 3

YES - The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

NO - go to 5

YES - The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland N

**NO** – go to 6

**YES** – The wetland class is **Riverine**

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

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number Wetland N

**DEPRESSIONAL AND FLATS WETLANDS**

**Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	<b>3</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	<b>1</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	<b>4</b>
Total for D 1	Add the points in the boxes above	<b>8</b>

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	<b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	<b>0</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source	Yes = 1 No = 0	<b>0</b>
Total for D 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M X 0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	<b>0</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	<b>0</b>
Total for D 3	Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is: 2-4 = H X 1 = M 0 = L Record the rating on the first page

**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	<b>4</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

**D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.**

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	<b>3</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

**D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.**

The area of the basin is less than 10 times the area of the unit	points = 5	<b>5</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4

Add the points in the boxes above

**12****Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L

Record the rating on the first page

**D 5.0. Does the landscape have the potential to support hydrologic functions of the site?****D 5.1. Does the wetland receive stormwater discharges?**

Yes = 1 No = 0

**0****D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?**

Yes = 1 No = 0

**0****D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?**

Yes = 1 No = 0

**0**

Total for D 5

Add the points in the boxes above

**0****Rating of Landscape Potential** If score is: \_\_\_ 3 = H \_\_\_ 1 or 2 = M X 0 = L

Record the rating on the first page

**D 6.0. Are the hydrologic functions provided by the site valuable to society?****D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.**

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
  - Surface flooding problems are in a sub-basin farther down-gradient. points = 1
- Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland. points = 0

**1****D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?**

Yes = 2 No = 0

**0**

Total for D 6

Add the points in the boxes above

**1****Rating of Value** If score is: \_\_\_ 2-4 = H X 1 = M \_\_\_ 0 = L

Record the rating on the first page



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>0</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |  |                                     |          |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 | <b>1</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                          | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                   | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <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</b>  | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                     | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

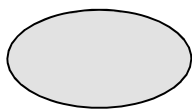
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

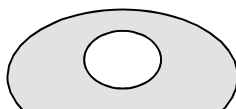
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

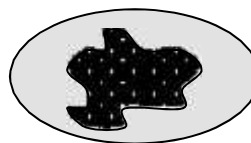
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



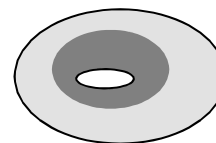
**None = 0 points**



**Low = 1 point**

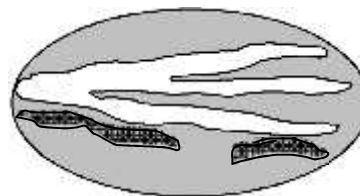
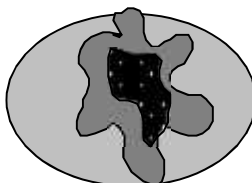
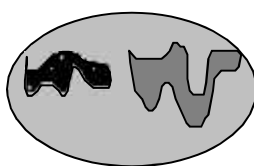


**Moderate = 2 points**



**1**

All three diagrams in this row are **HIGH = 3 points**



Wetland name or number Wetland N

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>2</b>
<p>Total for H 1</p> <p style="text-align: right;">Add the points in the boxes above</p>	<b>5</b>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>3</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u>%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p> <p style="text-align: right;">Add the points in the boxes above</p>	<b>3</b>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M     < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H 1 = M X 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- \_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- \_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- \_\_\_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- \_\_\_ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- \_\_\_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- \_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- \_\_\_ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- \_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- \_\_\_ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- \_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- \_\_\_ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- \_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- \_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>            Does the wetland meet the following criteria for Estuarine wetlands?            — The dominant water regime is tidal,            — Vegetated, and            — With a salinity greater than 0.5 ppt</p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p>	Cat. I
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?            — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)            — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.            — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	Cat. I  Cat. II
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>            SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?            SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?            SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>            SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p>	Cat. I
<p><b>SC 3.0. Bogs</b>            Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i>            SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?            SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?            SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.            SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p>	Cat. I

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland N

Wetland name or number Wetland O

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland O Date of site visit: 3/24/17

Rated by Katie Boa Trained by Ecology? Yes X No      Date of training 11/16

HGM Class used for rating Depressional Wetland has multiple HGM classes?     Y X     N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 – 27

     Category II – Total score = 20 – 22

     Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	<u>H</u> M L	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	H <u>M</u> L	H <u>M</u> L	H M <u>L</u>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland O

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	14
Hydroperiods	D 1.4, H 1.2	14
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	14
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	14
Map of the contributing basin	D 4.3, D 5.3	16
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	17

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	



## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

NO - go to 2

**YES** - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

NO - go to 3

**YES** - The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

NO - go to 5

**YES** - The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland O

**NO** – go to 6

**YES** – The wetland class is **Riverine**

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

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**DEPRESSIONAL AND FLATS WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	<b>3</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	<b>1</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	<b>4</b>
Total for D 1	Add the points in the boxes above	<b>8</b>

**Rating of Site Potential** If score is:     12-16 = H   X   6-11 = M     0-5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	<b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	<b>0</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source	Yes = 1 No = 0	<b>0</b>
Total for D 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is:     3 or 4 = H     1 or 2 = M   X   0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	<b>0</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	<b>0</b>
Total for D 3	Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is:     2-4 = H   X   1 = M     0 = L Record the rating on the first page

**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	<b>4</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	<b>3</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	<b>5</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4

Add the points in the boxes above

**12****Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

**0**

D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

**0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?

Yes = 1 No = 0

**0**

Total for D 5

Add the points in the boxes above

**0****Rating of Landscape Potential** If score is: \_\_\_ 3 = H \_\_\_ 1 or 2 = M X 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
  - Surface flooding problems are in a sub-basin farther down-gradient. points = 1
- Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland. points = 0

**1**

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

**0**

Total for D 6

Add the points in the boxes above

**1****Rating of Value** If score is: \_\_\_ 2-4 = H X 1 = M \_\_\_ 0 = L

Record the rating on the first page

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>0</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |  |                                     |          |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 | <b>1</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                          | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                   | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <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</b>  | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                     | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

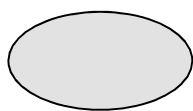
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

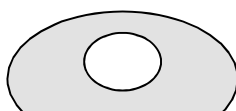
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

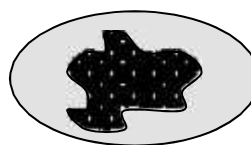
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



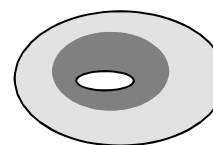
None = 0 points



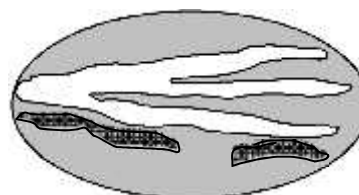
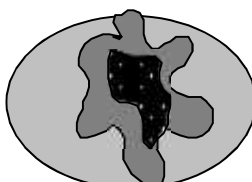
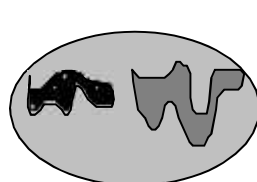
Low = 1 point



Moderate = 2 points



All three diagrams in this row are **HIGH** = 3points



**1**

Wetland name or number Wetland O

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>2</b>
<p>Total for H 1</p>	<p>Add the points in the boxes above</p> <p><b>5</b></p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>3</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p>	<p>Add the points in the boxes above</p> <p><b>3</b></p>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H 1 = M X 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- \_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- \_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- \_\_\_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- \_\_\_ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- \_\_\_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- \_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- \_\_\_ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- \_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- \_\_\_ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- \_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- \_\_\_ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- \_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- \_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Estuarine wetlands</b>            Does the wetland meet the following criteria for Estuarine wetlands?            — The dominant water regime is tidal,            — Vegetated, and            — With a salinity greater than 0.5 ppt</p> <p style="text-align: right;">Yes –Go to <b>SC 1.1</b>    <b>No = Not an estuarine wetland</b></p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: right;">Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b></p>	Cat. I
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?            — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)            — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.            — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	Cat. I  Cat. II
<p><b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b>            SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?            SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?            SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>            SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;">Yes – Go to <b>SC 2.2</b>    <b>No – Go to SC 2.3</b>            Yes = <b>Category I</b>    No = <b>Not a WHCV</b>            Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    <b>No = Not a WHCV</b>            Yes = <b>Category I</b>    No = <b>Not a WHCV</b></p>	Cat. I
<p><b>SC 3.0. Bogs</b>            Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?            SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?            SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?  <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.            SC 3.4. Is an area with peats or mucks forested (&gt; 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: right;">Yes – Go to <b>SC 3.3</b>    <b>No – Go to SC 3.2</b>            Yes – Go to <b>SC 3.3</b>    <b>No = Is not a bog</b>            Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b>            Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b></p>	Cat. I



<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland O

Wetland name or number Wetland P

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland P Date of site visit: 3/24/17

Rated by Katie Boa Trained by Ecology? Yes X No     Date of training 11/16

HGM Class used for rating Depressional Wetland has multiple HGM classes?    Y X    N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map Google Earth

**OVERALL WETLAND CATEGORY IV** (based on functions X or special characteristics    )

### 1. Category of wetland based on FUNCTIONS

    Category I – Total score = 23 – 27

    Category II – Total score = 20 – 22

    Category III – Total score = 16 – 19

X Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	<u>H</u> M L	H M <u>L</u>	
Landscape Potential	H M <u>L</u>	H M <u>L</u>	H <u>M</u> L	
Value	H <u>M</u> L	H <u>M</u> L	H M <u>L</u>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	N/A

Wetland name or number Wetland P

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	14
Hydroperiods	D 1.4, H 1.2	14
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	14
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	14
Map of the contributing basin	D 4.3, D 5.3	16
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	16
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	17
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	17

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of 150 ft buffer ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

## HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

NO - go to 2

**YES** - the wetland class is **Tidal Fringe** - go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

**NO - Saltwater Tidal Fringe (Estuarine)**

**YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

NO - go to 3

**YES** - The wetland class is **Flats**

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

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

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
 At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

NO - go to 5

**YES** - The wetland class is **Slope**

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

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

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
 The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland P

**NO** – go to 6

**YES** – The wetland class is **Riverine**

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

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

NO – go to 7

**YES** – The wetland class is **Depressional**

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

NO – go to 8

**YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM 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 the wetland unit being scored.

**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 HGM 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

**DEPRESSIONAL AND FLATS WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water quality

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1	<b>3</b>
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0		<b>0</b>
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0	<b>1</b>
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0	<b>4</b>
Total for D 1	Add the points in the boxes above	<b>8</b>

**Rating of Site Potential** If score is:     12-16 = H   X   6-11 = M     0-5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	<b>0</b>
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	<b>0</b>
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source	Yes = 1 No = 0	<b>0</b>
Total for D 2	Add the points in the boxes above	<b>0</b>

**Rating of Landscape Potential** If score is:     3 or 4 = H     1 or 2 = M   X   0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	<b>0</b>
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	<b>1</b>
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	<b>0</b>
Total for D 3	Add the points in the boxes above	<b>1</b>

**Rating of Value** If score is:     2-4 = H   X   1 = M     0 = L Record the rating on the first page

**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	<b>4</b>
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	<b>3</b>
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

The area of the basin is less than 10 times the area of the unit	points = 5	<b>5</b>
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	

Total for D 4

Add the points in the boxes above

**12****Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

**0**

D 5.2. Is &gt;10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

**0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at &gt;1 residence/ac, urban, commercial, agriculture, etc.)?

Yes = 1 No = 0

**0**

Total for D 5

Add the points in the boxes above

**0****Rating of Landscape Potential** If score is: \_\_\_ 3 = H \_\_\_ 1 or 2 = M X 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2
  - Surface flooding problems are in a sub-basin farther down-gradient. points = 1
- Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland. points = 0

**1**

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

**0**

Total for D 6

Add the points in the boxes above

**1****Rating of Value** If score is: \_\_\_ 2-4 = H X 1 = M \_\_\_ 0 = L

Record the rating on the first page



**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- |   |                                  |          |
|---|----------------------------------|----------|
| <input type="checkbox"/> Aquatic bed  | 4 structures or more: points = 4 | <b>0</b> |
| <input type="checkbox"/> Emergent   | 3 structures: points = 2         |          |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)  | 2 structures: points = 1         |          |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)   | 1 structure: points = 0          |          |
| <i>If the unit has a Forested class, check if:</i>  |                                  |          |
| <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 |                                  |          |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- |  |                                     |          |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated                                    | 4 or more types present: points = 3 | <b>1</b> |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated                          | 3 types present: points = 2         |          |
| <input type="checkbox"/> Occasionally flooded or inundated                                   | 2 types present: points = 1         |          |
| <input checked="" type="checkbox"/> Saturated only   | 1 type present: points = 0          |          |
| <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</b>  | <b>2 points</b>                     |          |
| <input type="checkbox"/> <b>Freshwater tidal wetland</b>                                     | <b>2 points</b>                     |          |

H 1.3. Richness of plant species

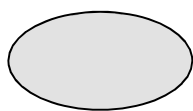
Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

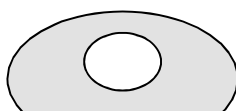
- |                              |            |          |
|------------------------------|------------|----------|
| If you counted: > 19 species | points = 2 | <b>1</b> |
| 5 - 19 species               | points = 1 |          |
| < 5 species                  | points = 0 |          |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



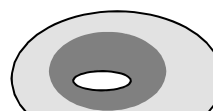
**None = 0 points**



**Low = 1 point**

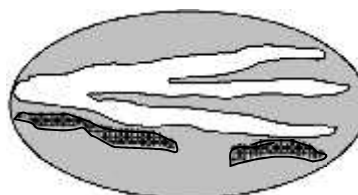
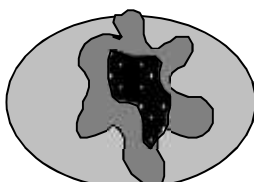
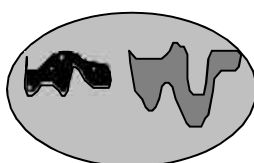


**Moderate = 2 points**



**1**

All three diagrams in this row are **HIGH = 3 points**



Wetland name or number Wetland P

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh &gt; 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<b>2</b>
<p>Total for H 1</p> <p style="text-align: right;">Add the points in the boxes above</p>	<b>5</b>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>If total accessible habitat is:</p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1 km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1 km Polygon <span style="float: right;">points = 1</span></p> <p>&lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>3</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p><i>Calculate:</i> % undisturbed habitat ___ + [(% moderate and low intensity land uses)/2] ___ = ___%</p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10-50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10-50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of 1 km Polygon <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p>&gt; 50% of 1 km Polygon is high intensity land use <span style="float: right;">points = (- 2)</span></p> <p>≤ 50% of 1 km Polygon is high intensity <span style="float: right;">points = 0</span></p>	<b>0</b>
<p>Total for H 2</p> <p style="text-align: right;">Add the points in the boxes above</p>	<b>3</b>

**Rating of Landscape Potential** If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p>Site has 1 or 2 priority habitats (listed on next page) within 100 m <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	
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**Rating of Value** If score is: 2 = H 1 = M X 0 = L *Record the rating on the first page*

## WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

\_\_\_ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

\_\_\_ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

\_\_\_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

\_\_\_ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

\_\_\_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

\_\_\_ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

\_\_\_ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

\_\_\_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

\_\_\_ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).

\_\_\_ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

\_\_\_ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

\_\_\_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

\_\_\_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to <b>SC 1.1</b> <b>No = Not an estuarine wetland</b>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	<b>Cat. I</b>
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = <b>Category I</b> No = <b>Category II</b>	<b>Cat. I</b>  <b>Cat. II</b>
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 2.2</b> <b>No – Go to SC 2.3</b> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b> <b>No = Not a WHCV</b> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b>	<b>Cat. I</b>
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to <b>SC 3.3</b> <b>No – Go to SC 3.2</b> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 3.3</b> <b>No = Is not a bog</b> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = <b>Is a Category I bog</b> No – Go to <b>SC 3.4</b> <b>NOTE:</b> 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = <b>Is a Category I bog</b> No = <b>Is not a bog</b>	<b>Cat. I</b>

<p><b>SC 4.0. Forested Wetlands</b></p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <b><i>If you answer YES you will still need to rate the wetland based on its functions.</i></b></p> <ul style="list-style-type: none"> <li>— <b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</li> <li>— <b>Mature forests</b> (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not a forested wetland for this section</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 5.0. Wetlands in Coastal Lagoons</b></p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b>    <b>No = Not a wetland in a coastal lagoon</b></p> <p><b>SC 5.1. Does the wetland meet all of the following three conditions?</b></p> <ul style="list-style-type: none"> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> <li>— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</li> <li>— The wetland is larger than 1/10 ac (4350 ft<sup>2</sup>)</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Category II</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. II</b></p>
<p><b>SC 6.0. Interdunal Wetlands</b></p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <b><i>If you answer yes you will still need to rate the wetland based on its habitat 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 style="text-align: right;">Yes – Go to <b>SC 6.1</b>    <b>No = not an interdunal wetland for rating</b></p> <p><b>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</b>  <span style="float: right;">Yes = <b>Category I</b>    No – Go to <b>SC 6.2</b></span></p> <p><b>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</b>  <span style="float: right;">Yes = <b>Category II</b>    No – Go to <b>SC 6.3</b></span></p> <p><b>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</b>  <span style="float: right;">Yes = <b>Category III</b>    No = <b>Category IV</b></span></p>	<p><b>Cat I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. III</b></p> <p><b>Cat. IV</b></p>
<p><b>Category of wetland based on Special Characteristics</b></p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	<p><b>N/A</b></p>

Wetland name or number Wetland P