# WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT AND CONCEPTUAL MITIGATION PLAN

# JACKSON HIGHWAY

OCTOBER 2020



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# JACKSON HIGHWAY

**OCTOBER 10, 2020** 

**Project Location** 2844 Jackson Highway Chehalis, Washington 98532

#### **PREPARED FOR**

**JOEL MOLANDER PUGET WESTERN INC.** 19515 NORTH CREEK PARKWAY SUITE 310 BOTHELL, WASHINGTON 98011-8200

**PREPARED BY SOUNDVIEW CONSULTANTS LLC** 2907 HARBORVIEW DRIVE GIG HARBOR, WASHINGTON 98335 (253) 514-8952



# **Executive Summary**

Soundview Consultants LLC (SVC) has been assisting Puget Western, Inc. (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment and Conceptual Mitigation Plan for a proposed industrial development of an approximately 69.42-acre site located at 2844 Jackson Highway in the City of Chehalis, Washington. The subject property is situated in the Southwest <sup>1</sup>/<sub>4</sub> of Section 11, Township 13 North, Range 02 West, W.M. (Lewis County Tax Parcel Numbers 017800001009, 017800001010, and 017800003000).

The subject property was initially investigated for the presence of potentially regulated wetlands, drainages, fish and wildlife habitat, and/or priority species in 2008 (Comis, 2008), which was revised and updated in 2010 (Comis, revised 2010), and subsequently an approved Jurisdictional Determination (JD) was issued by the USACE on October 29, 2013. SVC investigated the subject property for the presence of potentially regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species over multiple dates between 2014 and June of 2019. Groundwater monitoring was also conducted during the spring of 2019. Using current methodology, the site investigation identified twenty-five potentially regulated wetlands (Wetlands A-Y) and five agricultural drainage ditches (Ditches 1 through 5), one of which is likely considered a regulated waterbody (Ditch 1). The names of previously identified agricultural ditches were retained for ease of reference wherever possible in recent delineation and assessment efforts; however, all wetlands recently delineated by SVC have been renamed. Wetlands A-Q, T-W, and Y are classified as Category IV wetlands with low habitat scores subject to standard 50-foot buffers, and Wetlands R, S, and X are classified as Category III wetlands with low habitat scores subject to standard 80-foot buffers per Chehalis Municipal Code (CMC) 17.23.030.C. In consideration of upstream hydrologic sources, Ditch 1 is considered a seasonal, non-fish habitat stream (Type Ns) subject to a standard 50-foot buffer per CMC 17.25.030.B.5. Ditches 2-5 are not likely regulated as streams as they are intentionally created, artificially excavated ditches used for agricultural purposes. No other potentially regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified within 300 feet of the subject property.

The Applicant proposes industrial redevelopment of the subject property to include an 1,001,615square-foot warehouse distribution center with loading docks, trailer stalls, paved areas for parking, truck and van loading, and maneuvering, and stormwater infrastructure. Ingress and egress to the site will be provided via entrances and exits along Jackson Highway on the northeastern portion of the subject property. The project has been carefully designed to avoid critical areas to the greatest extent feasible by utilizing the developable upland areas on the center portion of the site, however, due to the distribution of small wetlands and the need for a large warehouse and associated infrastructure, direct and indirect impacts are unavoidable and necessary in order to achieve the Applicant's objectives. As such, the project proposes to directly impact approximately 133,813 square feet of low functioning, primarily Category IV wetlands (total fill of Wetlands A-D, I-U, X, and Y) and approximately 6,705 linear feet of ditch (Ditches 2-5). In addition, approximately 12,399 square feet of indirect wetland impacts (indirect impacts associated with Wetlands E, F, U, and W) and 2,258 square feet of stream buffer impacts are unavoidable. Any remnant drainage conveyances that supply drainage to these artificial ditches will be conveyed through stormwater bypasses to avoid downstream impacts. The proposed project minimizes direct impacts to identified critical areas with identified surface connectivity to downstream waters associated with offsite Berwick and Dillenbaugh Creeks; these actions will directly affect potentially jurisdictional Waters of the U.S. (WOTUS) regulated under

Section 404 of the Clean Water Act (CWA) by the U.S. Army Corps of Engineers (USACE), including Wetland J, which is located near the perimeter of the site. It should also be noted that site plan revisions were made to avoid direct impacts to the larger wetlands, including Wetlands E and F. As of December 23, 2019, WOTUS is defined following joint guidance issued in 2008 by USACE and the U.S. Environmental Protection Agency (EPA). The Navigable Waters Protection Rule was finalized in the Federal Register on April 21, 2020 and took effect on June 22, 2020. This rule will replace the 2008 joint guidance in defining WOTUS. This report provides regulatory analysis of WOTUS under the 2008 joint guidance and the Navigable Waters Protection Rule. However, the Applicant does not seek an approved jurisdictional determination (AJD) from the USACE at this time. Rather, the project proposal assumes that the USACE will assert jurisdiction over onsite wetlands until formal AJD is requested.

Compensatory mitigation for the wetland fill and permanent buffer impacts is proposed to be provided through the purchase of credits from the Chehalis Basin Wetland Mitigation Bank (CBWMB) as allowed per CMC 17.23.053.D and federal guidance. Onsite compensatory mitigation is not possible due to spatial requirements of the mitigation area and associated buffers which will impact the development feasibility of this site. In addition, the use of a mitigation bank is consistent with USACE rules and will likely provide a higher level of ecological lift than a small offsite, permittee-responsible mitigation actions. The proposed use of credits purchased from the CBWMB will result in a net gain in ecological functions over the existing degraded conditions of the wetlands proposed to be impacted. As such, the proposed project will result in no net loss of wetland functions within the Upper Chehalis watershed, or Water Resource Inventory Area (WRIA) 23. A conceptual mitigation plan is provided in Chapter 7 of this report.

Feature Name	Approximate Size/Length Onsite	Category/Type <sup>1</sup>	Regulated Under CMC Title 17 Division III	Regulated Under RCW 90.48	Regulated Under Section 404 of the CWA <sup>2</sup>	Regulated Under Section 404 of the CWA <sup>3</sup>
Wetland A	19,555 sq. ft / 0.44 acres	IV	Yes	Likely	Unlikely	Unlikely
Wetland B	1,252 / 0.03	IV	Yes	Likely	Unlikely	Unlikely
Wetland C	1,062 / 0.02	IV	Yes	Likely	Unlikely	Unlikely
Wetland D	28,382 / 0.65	IV	Yes	Likely	Unlikely	Unlikely
Wetland E	48,350 / 1.11	IV	Yes	Likely	Potentially	Potentially
Wetland F	72,968 / 1.68	IV	Yes	Likely	Potentially	Potentially
Wetland G	1,382 / 0.03	IV	Yes	Likely	Potentially	Potentially
Wetland H	4,790 / 0.11	IV	Yes	Likely	Unlikely	Unlikely
Wetland I	9,458 / 0.22	IV	Yes	Likely	Potentially	Unlikely
Wetland J	19,673 / 0.45	IV	Yes	Likely	Potentially	Potentially
Wetland K	16,939 / 0.39	IV	Yes	Likely	Potentially	Unlikely
Wetland L	2,752 / 0.06	IV	Yes	Likely	Unlikely	Unlikely
Wetland M	1,260 / 0.03	IV	Yes	Likely	Unlikely	Unlikely
Wetland N	1,502 / 0.03	IV	Yes	Likely	Unlikely	Unlikely
Wetland O	723 / 0.016	IV	Yes	Likely	Unlikely	Unlikely

The summary table below identifies the identified wetlands, stream, and ditches and potential regulatory status by local, state, and federal agencies.

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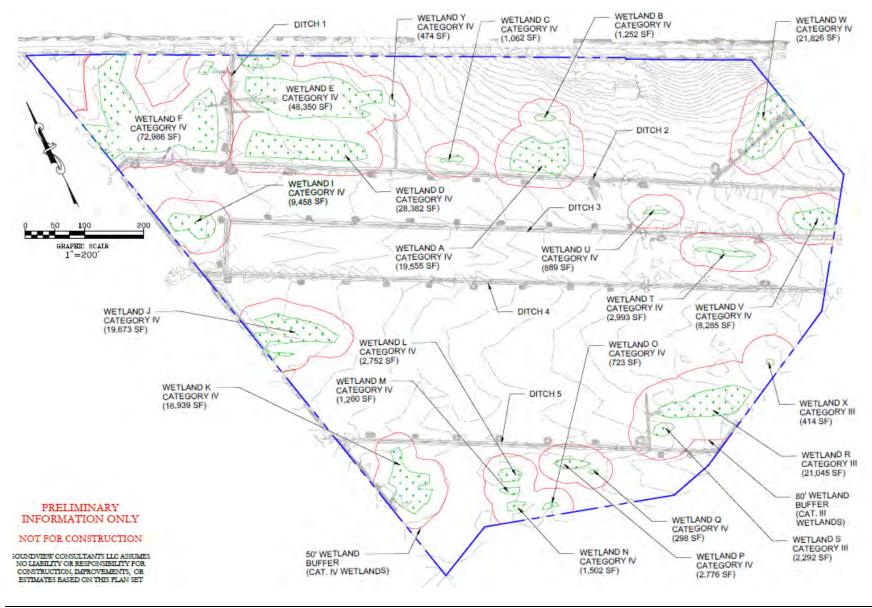
Note:

1. Current Washington State Department of Ecology (WSDOE) and CMC 17.23.010.D wetland definitions; Washington State Department of Natural Resources (DNR) water typing system and CMC 17.25.020 waterbodies definitions.

2. Recommendations of CWA Section 404 jurisdiction per 2019 repeal of Clean Water Rule (USACE and EPA, 2019) and 2008 joint guidance from USACE and EPA

3. Recommendations of CWA Section 404 jurisdiction per 2020 Navigable Waters Protection Rule set to take effect on June 22, 2020.

# Site Map



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Soundview Consultants LLC October 10, 2020

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# Chapter 1. Introduction

Soundview Consultants LLC (SVC) has been assisting Puget Western, Inc. (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment and Conceptual Mitigation Plan for a proposed industrial development of an approximately 69.42-acre site located at 2844 Jackson Highway in the City of Chehalis, Washington. The subject property is situated in the Southwest <sup>1</sup>/<sub>4</sub> of Section 11, Township 13 North, Range 02 West, W.M. (Lewis County Tax Parcel Numbers 017800001009, 017800001010, and 017800003000).

The purpose of this wetland and fish and wildlife habitat assessment report and mitigation plan is to identify the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species on or near the subject site, assess potential impacts to any such critical areas and/or species from the proposed project, and to provide mitigation to offset those impacts.

This report provides conclusions and recommendations regarding:

- Site description, project description, and area of assessment;
- Background research and identification of potentially regulated critical areas within the vicinity of the proposed project;
- Identification, delineation, and assessment, of potentially regulated wetlands and waterbodies;
- Identification and assessment of potentially regulated fish and wildlife habitat;
- Existing site map detailing identified wetlands, waterbodies, and associated buffers.
- Site plan detailing the proposed development.
- Documentation of impact avoidance and minimization measures.
- Description of impacts and Conceptual Mitigation Plan; and
- Supplemental information necessary for local, state, and federal regulatory review.

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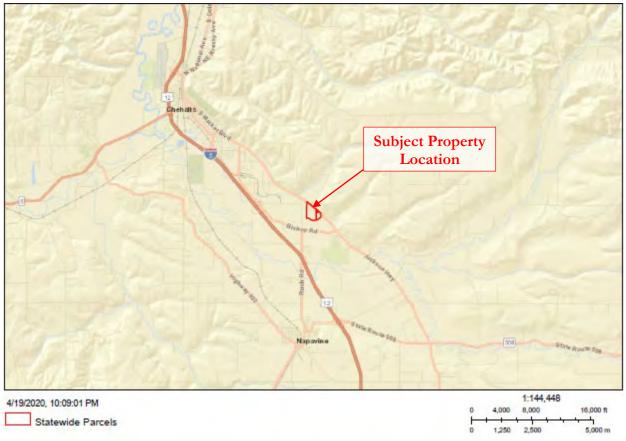
# Chapter 2. Project Location and Description

# 2.1 Project Location

The subject property consists of a 69.42-acre site located at 2844 Jackson Highway in the City of Chehalis, Washington. The subject property is situated in the Southwest <sup>1</sup>/<sub>4</sub> of Section 11, Township 13 North, Range 02 West, W.M. (Lewis County Tax Parcel Numbers 017800001009, 017800001010, and 017800003000).

To access the subject property from Interstate 5 southbound near Chehalis, take Exit 74 and turn left onto Labree Road. After 0.2 mile, continue straight onto Maurin Road. After 1.1 miles, turn left onto Rush Road. Continue for 0.1 mile and turn right onto Jackson Highway. After 0.6 mile, the subject property will be located on the right.

#### Figure 1. Vicinity Map.



# 2.2 Project Description

The Applicant proposes industrial redevelopment of the subject property to include an 1,001,615square-foot warehouse distribution center with loading docks, trailer stalls, paved areas for parking, truck and van loading, and maneuvering, and stormwater infrastructure . Ingress and egress to the site will be provided via entrances and exits along Jackson Highway on the northeastern portion of

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the subject property. The project has been carefully designed to avoid critical areas to the greatest extent feasible by utilizing the developable upland areas on the center portion of the site; however, due to the distribution of small wetlands and the need for a large warehouse and associated infrastructure, direct and indirect impacts are unavoidable and necessary in order to achieve the Applicant's objectives. As such, the project proposes to directly impact approximately 133,813 square feet of low functioning, primarily Category IV wetlands (total fill of Wetlands A-D, I-U, X, and Y) and approximately 6,705 linear feet of ditch (Ditches 2-5). In addition, approximately 12,399 square feet of indirect wetland impacts (indirect impacts associated with Wetlands E, F, U, and W) and 2,258 square feet of stream buffer impacts are unavoidable. Any remnant drainage conveyances that supply drainage to these artificial ditches will be conveyed through stormwater bypasses to avoid downstream impacts. The proposed project minimizes direct impacts to identified critical areas with identified surface connectivity to downstream waters associated with offsite Berwick and Dillenbaugh Creeks; these actions will directly affect potentially jurisdictional Waters of the U.S. (WOTUS) regulated under Section 404 of the Clean Water Act (CWA) by the U.S. Army Corps of Engineers (USACE). It should also be noted that site plan revisions were made to avoid direct impacts to the larger wetlands, including Wetlands E and F.

To ensure no effect to downstream areas, the project will provide accommodations for all impacted flows to be rerouted around the project area to the same exit points. Engineered outlets for the rerouted flows will be carefully designed to ensure no impact to downstream hydrology. No net loss is anticipated as a result of ditch modifications as the on-site ditches that will be directly impacted do not meet wetland or stream criteria and do not provide substantial habitat functions. As the onsite ditches which are being directly impacted are not considered streams, no compensatory mitigation is proposed for alteration of agricultural ditches.

Proposed wetland fill and compensatory wetland mitigation activities will require state and federal review and approvals; however, Ditches 2-5 are likely exempt from regulation by the City of Chehalis.

Compensatory mitigation for the wetland fill and permanent buffer impacts is proposed to be provided through the purchase of credits from the Chehalis Basin Mitigation Bank (CBMB) as allowed per CMC 17.23.053.D. Onsite compensatory mitigation is not possible due to spatial requirements of the mitigation area and associated buffers which will impact the development feasibility of this site. In addition, the use of a mitigation bank will likely provide a higher level of ecological lift than a small offsite, in-kind permittee responsible mitigation. As such, the proposed use of credits purchased from the CBMB will result in a net gain in ecological functions over the existing degraded conditions of the wetlands proposed to be impacted. The proposed project will result in no net loss of wetland functions within the Upper Chehalis watershed, or Water Resource Inventory Area (WRIA) 23. A conceptual mitigation plan is provided in Chapter 7 of this report.

# Chapter 3. Methods

SVC investigated, delineated, and assessed any potentially regulated wetlands, waterbodies, and other fish and wildlife habitat on and within 300 feet of the subject property over the course of several years between 2014 and June of 2019. Formal site assessment and confirmation of the previous Approved Jurisdictional Determination by the USACE (USACE, 2013) occurred during the spring of 2014 with additional site data collected in January 2015; rapid site assessment, collection of initial informal wetland data, and piezometer installation occurred during the spring and summer of 2018; and full site assessment with wetland and fish and wildlife habitat and waterbody re-delineations were completed in June and July of 2019. In addition, groundwater monitoring was conducted from March through June of 2019. All determinations were made using observable vegetation, hydrology, and soils in conjunction with background data collected from the U.S. Geological Survey (USGS) topographic map, Natural Resources Conservation Service (NRCS) soil survey, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and SalmonScape mapping tools, Washington State Department of Natural Resources (DNR) water typing data, precipitation data, and various orthophotographic resources, and prior assessment data. Appendix A contains further details for the methods and tools used to prepare this report.

Wetland boundaries were determined using the routine approach described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and as modified by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE, 2010) and *Field Indicators of Hydric Soils in the United States* (NRCS, 2018). Qualified wetland scientists marked boundaries of onsite wetlands with orange surveyor's flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundaries. PVC-tubing marked the groundwater monitoring stations. Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP-101 to DP-144; MP1A to MP1C and MP2 to MP-28). Additional tests pits were excavated at regular intervals inside and outside of the wetland boundaries to further confirm each delineation.

Wetlands were classified using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979; Federal Geographic Data Committee, 2013) classification systems. Following classification and assessment, all wetlands were rated and categorized using the *Washington State Wetlands Rating System* for Western Washington – Washington State Department of Ecology Publication No. 14-06-029, published October 2014 (Hruby, 2014). This is a deviation from the current guidelines established in CMC 17.23.010.D has been approved by the Chehalis City Planning department to reflect their current efforts to update their city code to utilize this system in 2020.

Ordinary high water (OHW) mark determinations were made using Washington State Department of Ecology's (WSDOE's) method as detailed in *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et al., 2016) and the definitions established in the Revised Code of Washington (RCW) 90.58.030(2)(b) and Washington Administrative Code (WAC) 173-22-030(11). Streams and surface water features were classified using the DNR water typing system as outlined in WAC 222-16-030 and the guidelines established in CMC 17.25.030.B.

The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. The experienced biologists made visual observations using stationery and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity.

Following formal site delineation, all onsite critical areas were formally surveyed by Barghausen Consulting Engineers, Inc. using professional surveying methods for accurate mapping purposes.

# Chapter 4. Existing Conditions

# 4.1 Landscape Setting

The subject property is located in an agricultural/residential/industrial setting within the City of Chehalis (Figure 2). The subject property is currently managed for agricultural production and consists of actively managed agricultural fields and associated buildings in poor condition. The site is currently utilized for hay crop production and harvest with occasional livestock grazing. The subject property is bounded by Jackson Highway, single-family residences, and undeveloped areas to the north and east; undeveloped areas and agricultural fields to the south; and Rush road to the west with multiple industrial properties and agricultural fields beyond. Topography on site slopes down gradually to the west with elevations ranging from approximately 270 feet above mean sea level (amsl) near the southeast portion of the site to approximately 240 feet amsl along the western portion of the site. A Lewis County topographic map is provided in Appendix B1. The subject property is located in Water Resource Inventory Area (WRIA) 23 – Upper Chehalis.

#### Subject Property Location But in the But in

#### Figure 2. Aerial Image of Subject Property.

#### 4.2 Soils

The NRCS Soil Survey of Lewis County, Washington, identifies three soil series on the site: Domell sandy loam (79); Reed silty clay loam (172); and Lacamas silt loam, 0 to 3 percent slopes (118) (Evans, 1987). A soil map is provided in Appendix B2. Below is a description of the soil profiles.

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#### Galvin silt loam, 0 to 8 percent (89)

According to the survey, Galvin silt loam, 0 to 8 percent slopes is a somewhat poorly drained soil that is found on terraces, alluvial fans, and bottom lands adjacent to streams and other drainageways. In a typical profile, the surface layer (0 to 9 inches) is a dark brown silt loam. The upper subsoil (9 to 27 inches) is a mottled dark yellowish-brown silty clay loam. The lower subsoil (27-60 inches) is a mottled, light brownish gray, yellowish brown, and strong brown. Permeability of this soil is slow and water capacity is high. Runoff is slow and the erosion hazard is high. Galvin silt loam, 0 to 8 percent slopes is not listed as hydric on the Lewis County Hydric Soils List except in areas with Lacamas silt loam, Reed silty clay loam, and Alvor silty clay loam inclusions (NRCS, N.d.).

### Reed silty clay loam (172)

According to the survey, Reed silty clay loam is a deep, poorly drained soil that is formed in mixed alluvium and found on flood plains where drainage has been altered by tiling. In a typical profile, the upper part of the surface layer is dark grayish brown silty clay loam about 6 inches thick with the underlying material do a depth of about 14 inches being a mottled, dark grayish brown silty clay loam. From 14 to 20 inches the subsoil is mottled, brown silty clay. Between depths of 20 and 37, it is mottled and consists of a very dark gray clay and dark grayish brown silty clay loam. From 37 to 60 or more inches the soil is a mottled black clay. Permeability is slow and the available water capacity is high. Effective rooting depth is limited by a high-water table that is at a depth of 18 to 36 inches during the rainy season. Surface runoff is slow, and the erosion hazard is minimal. Reed silty clay loam is hydric in areas with inclusions of Reed and Alvor soils (NRCS, N.d.).

# Lacamas silt loam, 0 to 3 percent (118)

Lacamas silt loam (118) soil series are very deep, poorly drained soils formed in broad plains and terraces on bottomlands that have been altered by tiling. This soil is formed in a mix of glaciofluvial or sedimentary materials. Slopes are nearly level or concave. In a typical profile, the surface layer is a dark grayish brown silt loam about 7 inches thick. The underlying material to a depth of 17 inches is a mottled, dark grayish brown and grayish brown silt loam. The upper 19 inches of the subsoil is a mottled, olive gray silty clay. The lower part to a depth of more than 60 inches is a mottled, olive gray clay loam. Lacamas silt loam may contain inclusions of hydric soils including drained or undrained Lacamas soil, as well as Klaber and Scamman soils. (NRCS, N.d.).

# 4.3 Vegetation

Vegetation on the subject property primarily consists of species typical of maintained fields including colonial bentgrass (*Agrostis capillaris*), meadow foxtail (*Alopecurus pratensis*), common velvetgrass (*Holcus lanatus*), orchard grass (*Dactylis glomerata*), quackgrass (*Elymus repens*), tall fescue (*Schedonorus arundinaceus*), creeping buttercup (*Ranunculus repens*), and bird's foot trefoil (*Lotus corniculatus*).

# 4.4 Critical Areas Inventories

The USFWS NWI Map (Appendix B2), WDFW PHS map (Appendix B5), and Lewis County stream and wetland inventory (Appendix B7) identify potential wetlands on the eastern and southwest portions of the subject property and extending offsite to the west and southeast. In addition, these maps identify potential wetlands offsite to the south associated with the mapped Berwick Creek. The DNR stream typing map (appendix B4), WDFW PHS map, WDFW SalmonScape map (Appendix B6), and Lewis County stream and wetland inventory identify Berwick Creek, a Type F stream, offsite to the south with documented presence of coho salmon and coastal cutthroat trout and the potential presence of rainbow trout. The WDFW PHS map also identifies potential presence of oak woodlands and Big Brown Bat (*Eptesicus fuscus*) in the vicinity of the site but not necessarily on the subject property. In addition, the FEMA flood hazard map (Appendix B8) identifies the 100-year floodplain encumbering the eastern portion of the site. No other potential wetlands, streams, or priority habitats or species are documented on or within 300 feet of the subject property.

# 4.5 Precipitation

Precipitation data was obtained from the National Oceanic and Atmospheric Administration (NOAA) station at Olympia Regional Airport in order to obtain percent of normal precipitation during and preceding the investigations. A summary of data collected is provided in Table 1.

Date	Day of	Day Before	1 Week Prior	2 Weeks Prior	30 Days Prior (Observed/Normal)	Year to Date (Observed/Normal) <sup>2</sup>	Percent of Normal <sup>3</sup>
3/6/19	0.13	0.00	0.13	0.71	4.86/5.77	10.17/14.21	84/72
3/20/19	0.00	0.00	0.00	1.03	1.43/4.94	10.90/16.63	29/83
3/27/19	0.16	0.01	0.00	0.00	1.39/4.85	11.43/17.78	29/64
4/04/19	0.12	0.02	0.00	0.53	1.53/5.12	11.57/18.98	30/61
4/09/19	0.20	0.35	2.39	0.20	2.79/4.9	13.15/19.64	57/67
4/18/19	0.01	0.04	0.48	2.39	2.92/4.42	13.82/20.72	66/67
4/24/19	0.00	Trace	0.33	0.82	3.17/4.06	14.11/21.37	78/66
5/01/19	0.00	0.00	0.00	0.33	2.68/3.47	14.11/22.02	29/64
5/08/19	0.00	0.00	0.00	0.00	1.16/3.10	14.11/22.61	37/62
5/14/19	0.14	0.00	0.14	0.00	0.55/2.75	14.25/23.05	20/62
5/21/19	Trace	0.03	0.42	0.56	0.62/2.49	14.67/23.55	25/62
6/25/19	0.00	0.00	0.00	0.00	0.07/2.00	15.08/25.83	4/58
6/26/19	0.03	0.00	0.03	0.03	0.10/1.97	15.11/25.87	5/58
6/27/19	0.07	0.03	0.10	0.10	0.17/1.93	15.18/25.91	9/59
6/28/19	0.00	0.07	0.10	0.10	0.17/1.90	15.18/25.95	9/58
7/12/19	0.00	0.03	0.65	0.78	0.78/1.25	15.96/26.36	62/61

Table 1. Precipitation Summary<sup>1</sup>

Notes:

1. Precipitation levels provided in inches. Data obtained from NOAA (http://w2.weather.gov/climate/xmacis.php?wfo=sew) for Olympia Airport.

2. Year-to-date precipitation is for the calendar year from January 1 to the onsite date s.

3. Percent of normal is shown for 30 days prior and for the 2019 Calendar year.

During the March and April 2019 site visits, precipitation levels were at or below the statistical normal for the 2019 calendar year (83, 64, 61, 67, 67 and 66 percent of normal), and lower than the statistical normal for the prior 30 days (40, 28, 30, 57, 66, and 78 percent of normal). Despite the fact that March and April are generally some of the wetter cooler and wetter months of the year in the Pacific Northwest region, this precipitation data still suggests slightly drier hydrologic conditions were encountered during site visits during these months. During the May and June site visits precipitation levels were slightly lower for the 2019 calendar year (64, 62, 62, 62, 58, 58, and 59) and dramatically lower than the statistical normal for the prior 30 days (29, 37, 20, 25, 4, 5, and 9) The months of May and June are generally months when temperatures increase and precipitation dissipates in the Pacific Northwest region. However, this precipitation data still suggests relatively drier than normal hydrologic conditions were encountered during the time of these site investigations. Conversely during our July 2019 site visit hydrologic conditions were only slightly drier than normal (61% of average for year; 62% of average for the prior 30 days) due to a relatively large uptick in precipitation during the two weeks prior. On average, site conditions during the span of repeated site investigations

were generally slightly drier than normal and showed a decreasing trend over that time period. These site conditions were considered during each site visit and when examining all data sets that were collected.

# Chapter 5. Results

The site investigations identified twenty-five potentially regulated wetlands (Wetlands A-Y) and five agricultural drainage ditches (Ditches 1 through 5), one of which is considered a regulated stream (Ditch 1). No other potentially regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified on or within 300 feet of the subject property.

# 5.1 Groundwater Monitoring

#### 2019 Growing Season

The daily minimum air temperatures at the WSU Chehalis weather station were above 33 °F for the majority of March 2019. Daily minimum air temperatures dropped below 28 °F from March 1st to March 11th. This cold period coincided with major snowfall events in the region. Seattle-Tacoma International Airport weather station recorded 1.7 inches of snowfall on February 4 and a total of 17.5 inches of snowfall between February 8 and February 11. However, snow was not present on the ground during monitoring well installation on March 5th and 6<sup>th</sup>, but snowfall was noted during the March 6<sup>th</sup>. Daily minimum air temperatures rose to be consistently above 32 °F starting on March 12 (Appendix G, Figure 1). Based on the 1971 to 2019 precipitation dataset from Seattle-Tacoma International Airport, the growing season has a 50 percent probability of beginning on February 8. The cold air temperatures and snowfall events in February 2019 delayed the start of the growing season relative to the statistical growing season start.

Daily minimum soil temperature from the WSU Chehalis weather station indicates that the soil temperature fluctuated above and below 41 °F during January and early February 2019. However, the daily minimum soil temperatures dropped below 41 °F during the beginning of February through March 2 but dropped again during the aforementioned snowfall event. Soil temperatures rose and remained above 41 °F at a depth of 8 inches below ground surface (bgs) beginning on March 14 (Appendix G, Figure 1), and this date was determined to be the start of the growing season for 2019 in the vicinity of the subject property following the guidance provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE, 2010).

#### Precipitation

Daily precipitation observed at the WSU Chehalis Weather Station ranged from 0.00 inch to 0.42 inch during the 2019 growing season monitoring visits. The three highest daily precipitation values occurred on the consecutive days of April 7, 8, and 9, totaling 1.12 inches; an additional 0.38 inches of rainfall accumulation was reported for April 5 and 6 for a total of 1.50 inches during this 5-day period. A high daily precipitation event also occurred immediately prior to the start of the growing season; 0.38 inch of precipitation fell on March 11. The greatest number of consecutive days with precipitation during the growing season monitoring period occurred from April 3 to April 11; 1.91 inches of precipitation fell during these nine days. The greatest number of consecutive days with no precipitation during the growing season monitoring period occurred from April 23 to May 13.

At the time of the first growing season monitoring visit on March 20, 2019, the water year precipitation was approximately 83 percent of normal. The water year precipitation dipped after that but remained between 59 to 67 percent of normal for the duration of the growing season monitoring visits. At the

time of the last growing season monitoring visit on May 21, 2019, the water year precipitation was approximately 62 percent of normal (Appendix G, Table 2). During all March and April growing season monitoring visits, the water year precipitation was above 62 percent of the long-term average. In addition, the combined average precipitation was 66 percent of normal for all visits despite a high of 83 percent during the March 14<sup>th</sup> site visit. his data indicates that water year precipitation was slightly below average during the growing season monitoring visits.

Monthly precipitation totals during March and May 2019 were below the 30<sup>th</sup> percentile of the 1981-2010 record at Olympia Regional airport, and monthly precipitation totals during February and April 2019 were above the 70<sup>th</sup> percentiles. The monthly precipitation total during June 2019 was between the 30<sup>th</sup> and 70<sup>th</sup> percentiles (Appendix G, Table 1).

The prior 30 days of precipitation at the time of the monitoring visits ranged from approximately 9 to 78 percent of normal during the growing season monitoring period. During the first majority of the growing season monitoring visits (with the exception of April 09, April 18, and April 24), the prior 30 days of precipitation were below 50 percent of normal (Table 1). This data indicates that the groundwater levels during these site visits were likely more indicative of long-term water table levels than of groundwater responses to recent precipitation events.

During the April 9, April 18, and April 24 monitoring visits, the prior 30 days of precipitation totals ranged from approximately 57 percent to approximately 78 percent of normal precipitation. The rise in the prior 30 days percent of the long-term average between the beginning of the growing season monitoring and April 24 results from the increased daily precipitation in April, including the April 5 through 9 precipitation event (Appendix G, Table 2). The normal precipitation conditions in April indicate that the groundwater system was receiving normal hydrologic inputs during at the time of the April 9, April 18, and April 24 monitoring visits.

Based on the WETS Table 30<sup>th</sup> and 70<sup>th</sup> percentiles for total monthly precipitation, total precipitation during April 2019 was above normal. The rise in the prior 30 days percent of normal during April and early May from approximately 65 percent to 127 percent demonstrates how April precipitation events provided significant hydrologic input to the groundwater system following a relatively dry March. These April precipitation events were characterized by the April 5 to April 9 high precipitation event and the 9 consecutive days of precipitation from April 3 to April 11. These data support that the conclusion that April monitoring visits provide groundwater measurements during a time period of normal or above normal precipitation amounts during the growing season.

#### Groundwater Levels

During the majority of the 2019 ground water monitoring visits (3/20, 3/27, 5/1, 5/8, 5/21, 5/28, 6/4, 6/11, and 6/17), the monitoring wells had groundwater depths that were below 12 inches. All the groundwater monitoring wells were completely dry as of the May 15<sup>th</sup> site visit. Following the high precipitation event during April 5th through April 9th, groundwater levels within all wells rose to above 12 inches of the ground surface and remained there for two to three weeks except for MP 15. However, groundwater levels within all wells fell following the April 9 monitoring visits despite the continued precipitation through April 19 (Appendix G, Table 3).

Results at all, but one (MP 15) of groundwater monitoring wells suggest that the site experiences high groundwater levels to contribute to wetland hydrology. The abundance of agricultural drainage ditches

onsite suggest that this site has been artificially drained for quite some time, but not enough to suspend wetland conditions in the delineated areas onsite. However, when considering the below average levels of precipitation for the season it is likely that all of these areas experience longer periods of saturation during average precipitation years. These groundwater monitoring data were used to determine the onsite wetland boundaries along with onsite conditions including slight changes in topography and shifts in vegetation patterns.

### 5.2 Wetlands

The twenty-five identified wetlands (Wetlands A-Y) contained indicators of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. A map depicting the identified critical areas and associated buffers is presented in Appendix C. Wetland data forms are provided in Appendix D, wetland rating forms are provided in Appendix F. Table 2 summarizes the wetlands identified on the subject property.

	Predomina	nt Wetland Clas	Wetland Size Onsite	Buffer		
Wetland	Cowardin <sup>1</sup>	HGM <sup>2</sup>	WSDOE <sup>3</sup>	City of Chehalis <sup>4</sup>	(square feet/acres)	Width (feet) <sup>5</sup>
Wetland A	PEMB	Slope	IV	IV	19,555 / 0.44	50
Wetland B	PEMB	Slope	IV	IV	1,252 / 0.03	50
Wetland C	PEMAB	Depressional	IV	IV	1,062 / 0.02	50
Wetland D	PEMAB	Depressional	IV	IV	28,382 / 0.65	50
Wetland E	PEMABd	Depressional	IV	IV	48,350 / 1.11	50
Wetland F	PEMABd	Depressional	IV	IV	72,968 / 1.68	50
Wetland G	PEMAB	Depressional	IV	IV	1,382 / 0.03	50
Wetland H	PEMAB	Depressional	IV	IV	4,790 / 0.11	50
Wetland I	PEMAB	Depressional	IV	IV	9,458 / 0.22	50
Wetland J	PEMAB	Depressional	IV	IV	19,673 / 0.45	50
Wetland K	PEMABd	Depressional	IV	IV	16,939 / 0.39	50
Wetland L	PEMAB	Depressional	IV	IV	2,752 / 0.06	50
Wetland M	PEMAB	Depressional	IV	IV	1,260 / 0.03	50
Wetland N	PEMAB	Depressional	IV	IV	1,502 / 0.03	50
Wetland O	PEMAB	Depressional	IV	IV	723 / 0.016	50
Wetland P	PEMAB	Depressional	IV	IV	2,776 / 0.06	50
Wetland Q	PEMAB	Depressional	IV	IV	298 / 0.006	50
Wetland R	PEMABd	Depressional	III	III	21,045 / 0.48	80
Wetland S	PEMB	Depressional	III	III	2,292 / 0.05	80

 Table 2. Wetland Summary

Wetland T	PEMB	Depressional	IV	IV	2,993 / 0.07	50
Wetland U	PEMB	Depressional	IV	IV	889 / 0.02	50
Wetland V	PEMAB	Depressional	IV	IV	8,285 / 0.19	50
Wetland W	PFO/SS/EMBd	Slope	IV	IV	21,826 / 0.50	50
Wetland X	PEMB	Depressional	III	III	414 / 0.009	80
Wetland Y	PEMAB	Depressional	IV	IV	474/0.01	50
Total 291,368 sq. ft / 6.69 acres						

Notes:

 Cowardin et al. (1979) or NWI Class based on vegetation: PSS = Palustrine Scrub-Shrub, PEM = Palustrine Emergent; Modifiers for Water Regime or Special Situations: A = Temporary Flooded, B = Seasonally Saturated, and d = Partially Drained/Ditched.

2. Brinson, M. M. (1993).

3. Current Washington State Wetland Rating System for Western Washington (Hruby, 2014).

4. Current WSDOE wetland rating system per CMC 17.23.010.D.

5. Wetland buffer standards per CMC 17.23.030.C.

#### Wetland A

Wetland A is approximately 19,555 square feet (0.44 acre) in size onsite and is located on the eastern portion of the subject property. Hydrology for Wetland A is provided by a seasonally high-water table, direct precipitation, surface runoff from adjacent uplands, and hillside seeps. Wetland vegetation is dominated by reed canary grass (*Phalaris arundinacea*), tall fescue (*Schedonorus Arundinaceus*), common velvetgrass (*Holcus lanatus*), meadow foxtail (*Alopecurus pratensis*), and colonial bentgrass (*Agrostis capillaris*). Wetland A is a Palustrine Emergent, Seasonally Saturated (PEMB) wetland. Per CMC 17.23.010.D, Wetland A is considered a Category IV slope wetland. Table 3 summarizes Wetland A.

#### Wetland B

Wetland B is approximately 1,252 square feet (0.03 acre) in size onsite and is located on the eastern portion of the subject property. Hydrology for Wetland B is provided by a seasonally high-water table, direct precipitation, surface runoff from adjacent uplands, and hillside seeps. Wetland vegetation is dominated by tall fescue, meadow foxtail, soft rush (*Juncus effusus*), and creeping buttercup (*Ranunculus repens*). Wetland B is a Palustrine Emergent, Seasonally Saturated (PEMB) wetland. Per CMC 17.23.010.D, Wetland B is considered a Category IV slope wetland. Table 4 summarizes Wetland B.

#### Wetland C

Wetland C is approximately 1,062 square feet (0.02 acre) in size onsite and is located on the northcentral portion of the subject property. Hydrology for Wetland C is provided by a seasonally highwater table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by tall fescue, creeping buttercup, and common velvetgrass. Wetland C is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland C is considered a Category IV depressional wetland. Table 5 summarizes Wetland C.

#### Wetland D

Wetland D is approximately 28,382 square feet (0.65 acre) in size onsite and is located on the northern portion of the subject property. Hydrology for Wetland D is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated

by colonial bentgrass, common velvetgrass, and creeping buttercup. Wetland D is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland D is considered a Category IV depressional wetland. Table 6 summarizes wetland D.

### Wetland E

Wetland E is approximately 48,350 square feet (1.11 acres) in size and is located on the northern portion of the subject property. Hydrology for Wetland E is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by colonial bentgrass, creeping buttercup, sweet vernal grass (*Anthoxanthum odoratum*), and orchard grass. Wetland E is a Palustrine Emergent, Temporarily Flooded, Seasonally Saturated, and Partially Drained/Ditched (PEMABd) wetland. Per CMC 17.23.010.D, Wetland E is considered a Category IV depressional wetland. Table 7 summarizes Wetland E.

### Wetland F

Wetland F is approximately 72,968 square feet (1.68 acres) in size and is located on the northern portion of the subject property. Hydrology for Wetland E is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by colonial bentgrass, creeping buttercup, and soft rush. Wetland F is a Palustrine Emergent, Temporarily Flooded, Seasonally Saturated, and Partially Drained/Ditched (PEMABd) wetland. Per CMC 17.23.010.D, Wetland F is considered a Category IV depressional wetland. Table 8 summarizes Wetland E.

# Wetland G

Wetland G is approximately 1,382 square feet (0.03 acre) in size and is located on the northern portion of the subject property. Hydrology for Wetland E is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by common velvet grass, colonial bentgrass, and creeping buttercup. Wetland G is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland G is considered a Category IV depressional wetland. Table 9 summarizes Wetland E.

# Wetland H

Wetland H is approximately 4,790 square feet (0.11 acre) in size and is located on northern portion of the subject property. Hydrology for Wetland H is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by reed canarygrass (*Phalaris arundinacea*), colonial bentgrass, creeping buttercup, sweet vernalgrass, and soft rush. Wetland H is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland H is considered a Category IV depressional wetland. Table 10 summarizes Wetland H.

# Wetland I

Wetland I is approximately 9,458 square feet (0.22 acre) in size and is located on the northwest portion of the subject property. Hydrology for Wetland I is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by colonial bentgrass, hairy cats-ear (*Hypochaeris radicata*), and meadow foxtail. Wetland I is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland I is considered a Category IV depressional wetland. Table 11 summarizes Wetland I.

### Wetland J

Wetland J is approximately 19,673 square feet (0.45 acre) in size and is located on the western edge of the subject property. Hydrology for Wetland J is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by reed canarygrass, common velvetgrass, tall fescue, and meadow foxtail. Wetland I is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland J is considered a Category IV depressional wetland. Table 12 summarizes Wetland J.

### Wetland K

Wetland K is approximately 16,939 square feet (0.39 acre) in size onsite and is located on the southwestern portion of the subject property. Hydrology for Wetland K is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by reed canarygrass, common velvetgrass, and bird's-foot trefoil (*Lotus corniculatus*). Wetland K is a Palustrine Emergent, Temporarily Flooded, Seasonally Saturated, and Partially Drained/Ditched (PEMABd) wetland. Per CMC 17.23.010.D, Wetland K is considered a Category IV depressional wetland. Table 13 summarizes wetland K.

### Wetland L

Wetland L is approximately 2,752 square feet (0.06 acre) in size and is located on the southwest portion of the subject property. Hydrology for Wetland L is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by hairy cat's ear, creeping buttercup, and shortawn foxtail (*Alopecurus aequalis*). Wetland L is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland L is considered a Category IV depressional wetland. Table 14 summarizes Wetland L.

#### Wetland M

Wetland M is approximately 1,260 square feet (0.03 acre) in size and is located on the southwest portion of the subject property. Hydrology for Wetland M is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by hairy cat's ear, creeping buttercup, and shortawn foxtail. Wetland M is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland M is considered a Category IV depressional wetland. Table 15 summarizes Wetland M.

# Wetland N

Wetland N is approximately 1,502 square feet (0.03 acre) in size and is located on the southwest portion of the subject property. Hydrology for Wetland N is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by hairy cat's ear, creeping buttercup, and soft rush. Wetland N is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland N is considered a Category IV depressional wetland. Table 16 summarizes Wetland N

# Wetland O

Wetland O is approximately 723 square feet (0.016 acre) in size and is located on the southern portion of the subject property. Hydrology for Wetland O is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by hairy cat's ear, common velvetgrass, and creeping buttercup. Wetland O is a Palustrine Emergent,

Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland O is considered a Category IV depressional wetland. Table 17 summarizes Wetland O.

### Wetland P

Wetland P is approximately 2,776 square feet (0.06 acre) in size and is located on southern portion of the subject property. Hydrology for Wetland P is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by creeping buttercup, tufted hair grass (*Deschampsia caespitosa*), water-plantain (*Alisma gramineum*), and soft rush. Wetland P is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland P is considered a Category IV depressional wetland. Table 18 summarizes Wetland P.

# Wetland Q

Wetland Q is approximately 298 square feet (0.006 acre) in size and is located on southern portion of the subject property. Hydrology for Wetland Q is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by meadow foxtail, hairy cat's ear, and soft rush. Wetland Q is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland Q is considered a Category IV depressional wetland. Table 19 summarizes Wetland Q.

### Wetland R

Wetland R is approximately 21,045 square feet (0.48 acre) in size and is located on the southern portion of the subject property. Hydrology for Wetland R is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated colonial bentgrass, creeping buttercup, common velvetgrass, and soft rush. Wetland R is a Palustrine Emergent, Temporarily Flooded, Seasonally Saturated, and Partially Drained/Ditched (PEMABd) wetland. Per CMC 17.23.010.D, Wetland R is considered a Category III depressional wetland. Table 20 summarizes Wetland R.

# Wetland S

Wetland S is approximately 2,293 square feet (0.05 acre) in size and is located on southern portion of the subject property. Hydrology for Wetland S is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by tall fescue, common velvetgrass, and colonial bentgrass. Wetland S is a Palustrine Emergent, Seasonally Saturated (PEMB) wetland. Per CMC 17.23.010.D, Wetland S is considered a Category III depressional wetland. Table 21 summarizes Wetland S.

# Wetland T

Wetland T is approximately 2,993 square feet (0.07 acre) in size and is located on southeast portion of the subject property. Hydrology for Wetland T is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by colonial bentgrass, tall fescue, and common velvetgrass. Wetland T is a Palustrine Emergent, Seasonally Saturated (PEMB) wetland. Per CMC 17.23.010.D, Wetland T is considered a Category IV depressional wetland. Table 22 summarizes Wetland T.

#### Wetland U

Wetland U is approximately 889 square feet (0.02 acre) in size and is located on the southeast portion of the subject property. Hydrology for Wetland U is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by reed canarygrass and soft rush. Wetland U is a Palustrine Emergent, Seasonally Saturated (PEMB) wetland. Per CMC 17.23.010.D, Wetland U is considered a Category IV depressional wetland. Table 23 summarizes Wetland U.

### Wetland V

Wetland V is approximately 8,285 square feet (0.19 acre) in size and is located on the eastern portion of the subject property. Hydrology for Wetland V is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by reed canarygrass and rush (*Juncus* sp.). Wetland V is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland V is considered a Category IV depressional wetland. Table 24 summarizes Wetland V.

#### Wetland W

Wetland W is approximately 21,826 square feet (0.50 acre) in size and is located on the eastern portion of the subject property, extending offsite to the east. Hydrology for Wetland W is provided by a seasonally high-water table, direct precipitation, surface runoff from adjacent uplands, and hillside seeps. Wetland vegetation onsite is dominated by reed canarygrass. Wetland W is a Palustrine Forested/Scrub-Shrub/Emergent, Seasonally Saturated and Partially Drained/Ditched (PFO/SS/EMBd) wetland. Per CMC 17.23.010.D, Wetland W is considered a Category IV slope wetland. Table 25 summarizes Wetland W.

#### Wetland X

Wetland X is approximately 414 square feet (0.009 acre) in size and is located on the southeast portion of the subject property. Hydrology for Wetland X is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by common velvetgrass and slough sedge (*Carex obnupta*). Wetland X is a Palustrine Emergent, Seasonally Saturated (PEMB) wetland. Per CMC 17.23.010.D, Wetland X is considered a Category III depressional wetland. Table 26 summarizes Wetland X.

# Wetland Y

Wetland Y is approximately 474 square feet (0.01 acre) in size and is located on northern portion of the subject property. Hydrology for Wetland Y is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands. Wetland vegetation is dominated by colonial bentgrass and creeping buttercup. Wetland Y is a Palustrine Emergent, Temporarily Flooded and Seasonally Saturated (PEMAB) wetland. Per CMC 17.23.010.D, Wetland Y is considered a Category IV depressional wetland. Table 27 summarizes Wetland Y.

1 able 5. wettand	•	RMATION SUMMARY						
Location:	Located on the north-eastern portion	n of the subject property.						
		Local Jurisdiction	City of Chehalis					
A DESCRIPTION OF THE PARTY OF THE		WRIA	23 – Upper Chehalis					
		WSDOE Rating (Hruby, 2014)	IV					
	City of Chehalis Rating IV							
	<b>除</b> 合於 州 合為	City of Chehalis Buffer Width	50 feet					
A MANAGER AND		Wetland Size	0.44 acre onsite					
L. Sector	A MARY MARK - A MARK	Cowardin Classification	PEMB					
		HGM Classification	Slope					
		Wetland Data Sheet(s)	MP-10					
N COM		Upland Data Sheet (s)	DP-101					
		Boundary Flag color	Orange					
Dominant	Wetland vegetation is dominated by r	eed canary grass, tall fescue, o	common velvetgrass, meadow					
Vegetation	foxtail, and colonial bentgrass							
Soils	Hydric soil indicators A12 (Thick Da	· · ·						
Hydrology	Hydrology for Wetland A is provid surface runoff from adjacent uplands		er table, direct precipitation,					
Rationale for Delineation	Wetland boundaries were determined predominant hydrophytic plant com		ges and a transition to a more					
Rationale for Local Rating	Local rating is based upon the currer	nt WSDOE wetland rating sy	stem per CMC 17.23.010.D.					
	Wetland Func	tions Summary						
Water Quality	Wetland A has moderate potential to improve water quality due to the minor slope in an area with agricultural runoff, the presence of dense, uncut, herbaceous plants in greater than 25 percent of the wetland area, and the wetland being situated in a sub-basin with water quality issues. Wetland A's score for Water Quality Functions using the 2014 method is moderate (6).							
Hydrologic	Wetland A has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient. However, this function is limited due to the absence of runoff-generating land uses upslope and less than 90 percent dense, rigid plant cover to reduce the velocity of surface flows. Wetland A's score for Hydrologic Functions using the 2014 method is moderate (6).							
	the 2014 method is moderate (6).							
Habitat		nd special habitat features th le habitat in the surrounding	eneral lack of overall habitat at increase habitat suitability. landscape due to the presence					
Habitat Buffer	the 2014 method is moderate (6). Habitat functions provided by Wet complexity, plant species richness, a In addition, there is a lack of accessib of high-intensity land uses in the area	nd special habitat features th le habitat in the surrounding a. Wetland A's score for Hab	eneral lack of overall habitat at increase habitat suitability. landscape due to the presence itat Functions using the 2014					

#### Table 3. Wetland A Summary.

Table 4. Wettand	<i></i>	RMATION SUMMARY				
Location:	Located in the north-eastern portion	of the subject property.				
		Local Jurisdiction	City of Chehalis			
		WRIA	23 – Upper Chehalis			
		WSDOE Rating	IV			
		(Hruby, 2014)	1 V			
	and I and the property of the	City of Chehalis	IV			
State of State and	all in a share a share a share a share	Rating				
Same and a second		City of Chehalis	50 feet			
		Buffer Width Wetland Size	0.02			
Kilson Alaya			0.03 acre onsite			
Marshall -1	Charles The Alles and	Cowardin Classification	PEMB			
A States		HGM Classification	Slope			
		Wetland Data Sheet(s)	DP-102			
mar in the	A ASSISSION DEL	Upland Data Sheet (s)	DP-101			
		Boundary Flag color	Orange			
Dominant	Wetland vegetation is dominated	by tall fescue, meadow fox	tail, soft rush, and creeping			
Vegetation	buttercup.					
Soils	Hydric soil indicator F6 (Redox Dar	Hydric soil indicator F6 (Redox Dark Surface) was observed.				
Hydrology	Hydrology for Wetland B is provid surface runoff from adjacent upland	s, and hillside seeps.	* *			
Rationale for	Wetland boundaries were determine		ges and a transition to a more			
Delineation	predominant hydrophytic plant com	munity.				
Rationale for Local Rating	Local rating is based upon the current	. 0	rstem per CMC 17.23.010.D.			
		ctions Summary				
Water Quality	Quality Wetland B has moderate potential to improve water quality due to the minor slope in an area with agricultural runoff, the presence of dense, uncut, herbaceous plants in greater than 25 percent of the wetland area, and the wetland being situated in a sub-basin with water quality issues. Wetland B's score for Water Quality Functions using the 2014 method is moderate (6).					
Hydrologic	Wetland B has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient. However, this function is limited due to the absence of runoff-generating land uses upslope and less than 90 percent dense, rigid plant cover to reduce the velocity of surface flows. Wetland B's score for Hydrologic Functions using the 2014 method is moderate (5).					
Habitat	Habitat functions provided by Wetland B are low due to a general lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland B's score for Habitat Functions using the 2014 method is moderate (3).					
Buffer	Much of the buffer area surroundir	ng Wetland B is degraded du	ie to the presence of mowed			
Condition	agricultural fields.		-			

#### Table 4. Wetland B Summary.

	WETLAND C – INFOR	RMATION SUMMARY			
Location:	Located on the north-central portion				
L . 101 . 7		Local Jurisdiction	City of Chehalis		
a ser		WRIA	23 – Upper Chehalis		
		WSDOE Rating	IV		
	and the second second	(Hruby, 2014)			
	and a second sec	City of Chehalis	IV		
		Rating			
Stranger and Sta		City of Chehalis	50 feet		
and the second second		Buffer Width	0.00		
Weinstein 18	and the of the same and the same the same	Wetland Size	0.02 acre onsite		
	A CONTRACTOR OF A CONTRACTOR	Cowardin Classification	PEMAB		
		HGM Classification	Depressional		
		Wetland Data Sheet(s)	DP-103		
		Upland Data Sheet (s)	DP-104		
		Boundary Flag color	Orange		
Dominant Vegetation	Wetland vegetation is dominated by tall fescue, creeping buttercup, and common velvet grass.				
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.				
Hydrology	Hydrology for Wetland C is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.				
Rationale for Delineation	Wetland boundaries were determined predominant hydrophytic plant comm		p and a transition to a more		
Rationale for Local Rating	Local rating is based upon the curren	t WSDOE wetland rating sy	stem per CMC 17.23.010.D.		
	Wetland Funct	tions Summary			
Water Quality	Quality Wetland C has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland C's score for Water Quality Functions using the 2014 method is moderate (6).				
Hydrologic	Wetland C has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland C's score for Hydrologic Functions using the 2014 method is moderate (6).				
Habitat	Habitat functions provided by Wetland C are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland C's score for Habitat Functions using the 2014 method is low (3).				
Buffer	Much of the buffer area surrounding	g Wetland C is degraded du	te to the presence of mowed		
Condition	agricultural fields.	~	_		

#### Table 5. Wetland C Summary.

Table 6. wettan		RMATION SUMMARY			
Location:	Located on the northwest portion of	the subject property.			
		Local Jurisdiction	City of Chehalis		
		WRIA	23 – Upper Chehalis		
	Martin inthe inthe	WSDOE Rating (Hruby, 2014)	IV		
AND SALE OF SALE	Sandre States Sta	City of Chehalis Rating	IV		
		City of Chehalis Buffer Width	50 feet		
		Wetland Size	0.65 acre onsite		
		Cowardin Classification	PEMAB		
N. Securi	Charles Martines	HGM Classification	Depressional		
	1 de la constance	Wetland Data Sheet(s)	MP-11, MP-12		
NU COM	X MARK	Upland Data Sheet (s)	DP-105		
		Boundary Flag color	Orange		
Dominant	Wetland vegetation is dominated by c	colonial bentgrass, creeping b	outtercup, and common velvet		
Vegetation	grass.				
Soils	Hydric soil indicator F6 (Redox Darl	k Surface) was observed.			
Hydrology	Hydrology for Wetland D is provided surface runoff from adjacent uplands		table, direct precipitation, and		
Rationale for Delineation	Wetland boundaries were determine predominant hydrophytic plant com		p and a transition to a more		
Rationale for Local Rating	Local rating is based upon the currer	nt WSDOE wetland rating sy	rstem per CMC 17.23.010.D.		
	Wetland Func	tions Summary			
Water Quality	Wetland D has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland D's score for Water Quality Functions using the 2014 method is moderate (6).				
Hydrologic	Wetland D has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland D's score for Hydrologic Functions using the 2014 method is moderate (6).				
Habitat	Habitat functions provided by Wetland D are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland D's score for Habitat Functions using the 2014 method is low (3).				
Buffer	Much of the buffer area surroundin	g Wetland D is degraded du	ie to the presence of mowed		
Condition	agricultural fields.				

#### Table 6. Wetland D Summary.

Table 7. wettand		RMATION SUMMARY	
Location:	Located on the northern portion of		
		Local Jurisdiction	City of Chehalis
		WRIA	23 – Upper Chehalis
		WSDOE Rating (Hruby, 2014)	IV
		City of Chehalis Rating	IV
	1 sugar to the second	City of Chehalis Buffer Width	50 feet
N ASSAULT	A AND A RANGE A HEREAL AND	Wetland Size	1.11 acre onsite
State And Anna A		Cowardin Classification	PEMABd
		HGM Classification	Depressional
	1 Angel and a state	Wetland Data Sheet(s)	DP-141
	Charles and the second s	Upland Data Sheet (s)	DP-142
		Boundary Flag color	Orange
Dominant	Wetland vegetation is dominated by	colonial bentgrass, creeping	buttercup, orchard grass, and
Vegetation	sweet vernal grass.		
Soils	Hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.		
Hydrology	Hydrology for Wetland E is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a transition to a more predominant hydrophytic plant community.		
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.		
	Wetland Func	ctions Summary	
Water Quality	Wetland E has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland E's score for Water Quality Functions using the 2014 method is moderate (6).		
Hydrologic	Wetland E has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland E's score for Hydrologic Functions using the 2014 method is moderate (6).		
	Habitat functions provided by Wetland E are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland E's score for Habitat Functions using the 2014 method is low (3).		
Habitat	intensity land uses in the area. Wetla is low (3).	and E's score for Habitat Fun	ctions using the 2014 method
Habitat Buffer Condition	intensity land uses in the area. Wetla	and E's score for Habitat Fun	ctions using the 2014 method

### Table 7. Wetland E Summary.

Table 8. wettand		RMATION SUMMARY	
Location:	Located on the northern portion of t	he subject property.	
A MALES		Local Jurisdiction	City of Chehalis
a low the state	A TO	WRIA	23 – Upper Chehalis
The second second	and the second second second	WSDOE Rating (Hruby, 2014)	IV
		City of Chehalis Rating	IV
A TANK		City of Chehalis Buffer Width	50 feet
A Constant Section		Wetland Size	1.68 acre onsite
		Cowardin Classification	PEMABd
	Cast Contraction States	HGM Classification	Depressional
		Wetland Data Sheet(s)	MP-1A, MP-14, MP-1C, MP-13,
		Upland Data Sheet (s)	DP-107, DP-143
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by colonial bentgrass, creeping buttercup, and soft rush.		
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface), A12 (Thick Dark Surface) and F6 (Redox Dark Surface) were observed.		
Hydrology	Hydrology for Wetland F is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a transition to a more predominant hydrophytic plant community.		
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.		
0	Wetland Funct	tions Summary	
Water Quality	Wetland F has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields and nearby septic system generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland F's score for Water Quality Functions using the 2014 method is moderate (6).		
Hydrologic	Wetland F has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland F's score for Hydrologic Functions using the 2014 method is moderate (6).		
Habitat	Habitat functions provided by Wetland F are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland F's score for Habitat Functions using the 2014 method is low (3).		
Buffer	Much of the buffer area surrounding	g Wetland F is degraded du	ie to the presence of mowed
Condition	agricultural fields.		

#### Table 8. Wetland F Summary.

Table 9. wettand		RMATION SUMMARY	
Location:	Located on the northern portion of t	the subject property.	
AND ALL		Local Jurisdiction	City of Chehalis
a la se training the	A TO	WRIA	23 – Upper Chehalis
The Art of		WSDOE Rating (Hruby, 2014)	IV
		City of Chehalis Rating	IV
		City of Chehalis Buffer Width	50 feet
Frank Madestanie		Wetland Size	0.03 acre onsite
		<b>Cowardin Classification</b>	PEMAB
		HGM Classification	Depressional, Ditched
No.		Wetland Data Sheet(s)	DP-108
		Upland Data Sheet (s)	DP-107
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by o	colonial bentgrass, creeping b	outtercup, and common velvet
Soils	grass. Hydric soil indicator F6 (Redox Dark Surface) was observed.		
Hydrology	Hydrology for Wetland G is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a transition to a more predominant hydrophytic plant community.		
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.		
		tions Summary	
Water Quality	Wetland G has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields and nearby septic system generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland G's score for Water Quality Functions using the 2014 method is moderate (6).		
Hydrologic	Wetland G has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland G's score for Hydrologic Functions using the 2014 method is moderate (6).		
Habitat	Habitat functions provided by Wetland G are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland G's score for Habitat Functions using the 2014 method is low (3).		
Buffer	Much of the buffer area surroundin	g Wetland G is degraded du	ie to the presence of mowed
Condition	agricultural fields.		

### Table 9. Wetland G Summary.

WETLAND H – INFORMATION SUMMARY			
Location:	Located on the northern portion	n of the subject property.	
	a state of the second se	Local Jurisdiction	City of Chehalis
		WRIA	23 – Upper Chehalis
and the second second	and the second s	WSDOE Rating	IV
A Standard		(Hruby, 2014)	1 V
		City of Chehalis	IV
		Rating	1 V
ELSI CARA	Law 22 An	City of Chehalis	50 feet
	the second	Buffer Width	50 1001
Constant State	No. 10 Statement of the State of the	Wetland Size	0.11 acre onsite
	And the second	Cowardin Classification	PEMAB
一個之行曲	the second second	HGM Classification	Depressional, Ditched
	Lade A State	Wetland Data Sheet(s)	DP-109
a state	A A REAL PROPERTY AND	Upland Data Sheet (s)	DP-110
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass, colonial bentgrass, creeping buttercup, sweet vernal grass, and soft rush.		
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.		
Hydrology	Hydrology for Wetland H is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a transition to a more predominant hydrophytic plant community.		
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Wetland I	Functions Summary	
Water Quality	Wetland H has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields and nearby septic system generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland H's score for Water Quality Functions using the 2014 method is moderate (6).		
Hydrologic	Wetland H has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland H's score for Hydrologic Functions using the 2014 method is moderate (6).		
Habitat	Habitat functions provided by Wetland H are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland H's score for Habitat Functions using the 2014 method is low (3).		
Buffer		unding Wetland H is degraded d	ue to the presence of mowed
Condition	agricultural fields.		

#### Table 10. Wetland H Summary.

	WETLAND I – INF	ORMATION SUMMARY	
Location:	Located on the northwest portion	of the subject property.	
de Ale	the second second	Local Jurisdiction	City of Chehalis
Contra di Stati Ma		WRIA	23 – Upper Chehalis
Case 1 - Mr	· · ··································	WSDOE Rating (Hruby, 2014)	IV
		City of Chehalis Rating	IV
		City of Chehalis Buffer Width	50 feet
	WANTER CONTRACTOR OF THE READING	Wetland Size	0.22 acre onsite
		Cowardin Classification	PEMAB
		HGM Classification	Depressional
		Wetland Data Sheet(s)	MP-16
AND WAY		Upland Data Sheet (s)	DP-111
		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by colonial bentgrass, meadow foxtail, and hairy cat's ear.		
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.		
Hydrology	Hydrology for Wetland I is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for	Wetland boundaries were determined by slight topographic drop and a transition to a more		
Delineation	predominant hydrophytic plant community.		
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.		
		nctions Summary	
Water Quality	Wetland I has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland I's score for Water Quality Functions using the 2014 method is moderate (6).		
Hydrologic	Wetland I has a moderate potential to improve hydrologic functions due to its location in a sub- basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland I's score for Hydrologic Functions using the 2014 method is moderate (6).		
Habitat	Habitat functions provided by Wetland I are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland I's score for Habitat Functions using the 2014 method is low (3).		
	15 IOW (J).		
Buffer	Much of the buffer area surround	ding Wetland I is degraded du	e to the presence of mowed

#### Table 11. Wetland I Summary.

	WETLAND J – INF	ORMATION SUMMARY		
Location:	Located on the western edge of the			
100 million (1997)		Local Jurisdiction	City of Chehalis	
	and the second se	WRIA	23 – Upper Chehalis	
	a second second	WSDOE Rating	IV	
100 C		(Hruby, 2014)	1 V	
	1-D Composition of the second	City of Chehalis	IV	
-	and and an and a state of the	Rating		
And a stall		City of Chehalis	50 feet	
	And the second sec	Buffer Width	0.45	
	and the second	Wetland Size	0.45 acre onsite	
and the second star		Cowardin Classification	PEMAB	
		HGM Classification	Depressional	
2109.988		Wetland Data Sheet(s)	DP-113	
		Upland Data Sheet (s)	DP-112, MP-18, and MP- 20	
SHE TANK A	TTURN SALAS X AND	Boundary Flag color	Orange	
Dominant	Wetland vegetation is dominated by colonial bentgrass, reed canarygrass, meadow foxtail, and			
Vegetation	tall fescue.			
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface), F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.			
Hydrology	Hydrology for Wetland J is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for	Wetland boundaries were determined by slight topographic drop and a transition to a more			
Delineation	predominant hydrophytic plant community.			
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
Wetland Functions Summary				
Water Quality	Wetland J has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland J's score for Water Quality Functions using the 2014 method is moderate (6).			
Hydrologic	Wetland J has a moderate potential to improve hydrologic functions due to its location in a sub- basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland J's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland J are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland J's score for Habitat Functions using the 2014 method is low (3).			
Buffer	Mu Much of the buffer area surrou	unding Wetland J is degraded d	lue to the presence of mowed	
Condition	agricultural fields.			

#### Table 12. Wetland J Summary.

	u K Summary. WETLAND K – INFO	ORMATION SUMMARY		
Location:	Located on the southwestern portio			
		Local Jurisdiction	City of Chehalis	
		WRIA	23 – Upper Chehalis	
-	succession in the local data and	WSDOE Rating	IV	
Carlos Bar	and a Charles and a standard	(Hruby, 2014)	1 v	
*		City of Chehalis	IV	
	and the second second	Rating	· · · · · · · · · · · · · · · · · · ·	
Land and a state of	and the second second	City of Chehalis Buffer Width	50 feet	
and the states	Contractor Contractor	Wetland Size	0.39 acre onsite	
	A LET TA	Cowardin Classification	PEMABd	
Constant of the	We want the second second			
	Contraction of the	HGM Classification	Depressional, Ditched	
	K. Conversion	Wetland Data Sheet(s)	DP-115 and MP-22	
(这个中国)	的历史的专家的考虑	Upland Data Sheet (s)	DP-114 and MP-21	
		Boundary Flag color	Orange	
Dominant	Wetland vegetation is dominated	by reed canarygrass, commor	n velvetgrass, and bird's foot	
Vegetation	trefoil.		0	
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.			
Hydrology	Hydrology for Wetland K is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for	Wetland boundaries were determin		p and a transition to a more	
Delineation	predominant hydrophytic plant con	nmunity.		
Rationale for Local Rating	Local rating is based upon the curre	ent WSDOE wetland rating sy	vstem per CMC 17.23.010.D.	
	Wetland Fun	ctions Summary		
Water Quality	Wetland K has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland K's score for Water Quality Functions using the 2014 method is moderate (6).			
Hydrologic	Wetland K has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland K's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland C are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland K's score for Habitat Functions using the 2014 method is low (3).			
Buffer Condition	Much of the buffer area surroundi agricultural fields.	ing Wetland K is degraded du	ae to the presence of mowed	

### Table 13. Wetland K Summary.

Table 14. wettal		RMATION SUMMARY		
Location:	Located on the southwest portion o	f the subject property.		
		Local Jurisdiction	City of Chehalis	
Sec. Prove		WRIA	23 – Upper Chehalis	
The state of the second second		WSDOE Rating	IV	
and the second	A difference of the second sec	(Hruby, 2014)	1 V	
		City of Chehalis	IV	
and the second		Rating		
		City of Chehalis	50 feet	
		Buffer Width	0.04	
		Wetland Size	0.06 acre onsite	
		Cowardin Classification	PEMAB	
		HGM Classification	Depressional	
		Wetland Data Sheet(s)	DP-116 and MP-23	
		Upland Data Sheet (s)	DP-117	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by shortawn foxtail, creeping buttercup, and hairy cat's ear.			
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.			
Hydrology	Hydrology for Wetland L is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for Delineation	Wetland boundaries were determine predominant hydrophytic plant com		p and a transition to a more	
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
		ctions Summary		
Water Quality	Wetland L has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland L's score for Water Quality Functions using the 2014 method is moderate (6).			
Hydrologic	Wetland L has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland L's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland L are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland L's score for Habitat Functions using the 2014 method is low (3).			
Buffer	Much of the buffer area surroundir	ng Wetland L is degraded du	te to the presence of mowed	
Condition	agricultural fields.	-		

# Table 14. Wetland L Summary.

Table 15. wettan	<i></i>	DRMATION SUMMARY		
Location:	Located on the southwest portion of	f the subject property.		
		Local Jurisdiction	City of Chehalis	
Sec. Sec.		WRIA	23 – Upper Chehalis	
A STATE OF A STATE OF		WSDOE Rating	IV	
Concernation of the	All have been a second s	(Hruby, 2014)	1 V	
		City of Chehalis	IV	
and a second second second	A REAL PROPERTY AND A REAL	Rating		
	and the second	City of Chehalis	50 feet	
		Buffer Width	0.03 acre onsite	
		Wetland Size Cowardin Classification	PEMAB	
	·可思。 · Planks	HGM Classification	Depressional	
		Wetland Data Sheet(s)	DP-118	
		Upland Data Sheet (s)	DP-117 and DP-119	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by shortawn foxtail, creeping buttercup, and hairy cat's ear.			
Soils	Hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.			
Hydrology	Hydrology for Wetland M is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for Delineation	Wetland boundaries were determin predominant hydrophytic plant com		p and a transition to a more	
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
		ctions Summary		
	Wetland M has a moderate potential			
Water Quality	outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated			
	in a sub-basin with water quality iss	ues. Wetland M's score for W	ater Quality Functions using	
	the 2014 method is moderate (6).		tiona due to its la action i	
	Wetland M has a moderate potential to improve hydrologic functions due to its location in a sub basis where flooding is a problem down gradient and the presence of intensive lend uses			
Hydrologic	sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage			
	in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland M's score for Hydrologic Functions using the 2014 method is moderate (6).			
	Wetland M's score for Hydrologic F	Functions using the 2014 meth	nod is moderate (6).	
		Functions using the 2014 meth and M are low due to a lack	nod is moderate (6). of overall habitat complexity,	
Habitat	Wetland M's score for Hydrologic F Habitat functions provided by Wetl	Functions using the 2014 meth and M are low due to a lack abitat features that increase h	nod is moderate (6). of overall habitat complexity, abitat suitability. In addition,	
Habitat	Wetland M's score for Hydrologic F Habitat functions provided by Wetl plant species richness, and special h there is a lack of accessible habitat intensity land uses in the area. Wetla	Functions using the 2014 meth and M are low due to a lack abitat features that increase h in the surrounding landscape	nod is moderate (6). of overall habitat complexity, abitat suitability. In addition, due to the presence of high-	
Habitat Buffer	Wetland M's score for Hydrologic F Habitat functions provided by Wetl plant species richness, and special h there is a lack of accessible habitat	Functions using the 2014 meth and M are low due to a lack abitat features that increase h in the surrounding landscape and M's score for Habitat Fun	nod is moderate (6). of overall habitat complexity, abitat suitability. In addition, due to the presence of high- ctions using the 2014 method	

# Table 15. Wetland M Summary.

	WETLAND N – INFORMATION SUMMARY			
Location:	Located on the southwest portion of	of the subject property.		
No.		Local Jurisdiction	City of Chehalis	
and the second sec		WRIA	23 – Upper Chehalis	
		WSDOE Rating	TX7	
		(Hruby, 2014)	IV	
		City of Chehalis	IV	
		Rating	1 v	
And Andrews	and the second	City of Chehalis	50 feet	
Sum of a labor	a tradition of the second states	Buffer Width		
Concision X 1997		Wetland Size	0.03 acre onsite	
A. False or	C. T. S. LAND CO. S. LAND	Cowardin Classification	PEMAB	
		HGM Classification	Depressional	
		Wetland Data Sheet(s)	DP-120	
		Upland Data Sheet (s)	DP-119	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by	y soft rush, creeping buttercup	o, and hairy cat's ear.	
Soils	Hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.			
Hydrology	Hydrology for Wetland N is provid surface runoff from adjacent upland		table, direct precipitation, and	
Rationale for	Wetland boundaries were determin	ned by slight topographic dro	p and a transition to a more	
Delineation	predominant hydrophytic plant con	nmunity.		
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
Local Raing	Wetland Fun	ctions Summary		
	Wetland N has a moderate potentia		to the lack of a surface water	
Water Quality	outlet, the surrounding agricultural in a sub-basin with water quality iss	fields generating pollutants, a	nd the wetland being situated	
	the 2014 method is moderate (6).			
	Wetland N has a moderate potenti			
Hydrologic	sub-basin where flooding is a problem down gradient and the presence of intensive land uses			
i i jui ologio	in the contributing basin. However, this function is limited by the minimal depth of storage.			
	Wetland N's score for Hydrologic I			
	Habitat functions provided by Wet		1 F	
Habitat	plant species richness, and special h		-	
Tabliai	there is a lack of accessible habitat intensity land uses in the area. Wetl			
	is low (3).	and in 5 score for mabilial pull	cuons using the 2014 method	
Buffer	Much of the buffer area surroundi	ng Wetland N is degraded d	ie to the presence of mowed	
Condition	agricultural fields.		at to the presence of mowed	
Condition	agriculturar netus.			

# Table 16. Wetland N Summary.

Table 17. wettan		DRMATION SUMMARY		
Location:	Located on the southern portion of	the subject property.		
		Local Jurisdiction	City of Chehalis	
and the second		WRIA	23 – Upper Chehalis	
-	No. 1 Carlos Auros	WSDOE Rating (Hruby, 2014)	IV	
		City of Chehalis Rating	IV	
		City of Chehalis Buffer Width	50 feet	
a thirtheast		Wetland Size	0.016 acre onsite	
		<b>Cowardin Classification</b>	PEMAB	
		HGM Classification	Depressional	
	and the second second	Wetland Data Sheet(s)	DP-122	
	CONTRACTOR OF THE	Upland Data Sheet (s)	DP-121	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by common velvet grass, creeping buttercup, and hairy cat's ear.			
Soils	Hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.			
Hydrology	Hydrology for Wetland O is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for	Wetland boundaries were determin	ed by slight topographic dro	p and a transition to a more	
Delineation	predominant hydrophytic plant com	nmunity.		
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
		ctions Summary		
Water Quality	Wetland O has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland O's score for Water Quality Functions using the 2014 method is moderate (6).			
Hydrologic	Wetland O has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland O's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland O are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland O's score for Habitat Functions using the 2014 method is moderate (3).			
Buffer	Much of the buffer area surrounding	ng Wetland O is degraded du	ie to the presence of mowed	
Condition	agricultural fields.	-		

# Table 17. Wetland O Summary.

	WETLAND P – INFO	ORMATION SUMMARY	
Location:	Located on the southern portion of		
	and the second s	Local Jurisdiction	City of Chehalis
CO. 100	and a second second second	WRIA	23 – Upper Chehalis
10 Mar 10	and the second se	WSDOE Rating	IV
	and the second	(Hruby, 2014)	1 V
		City of Chehalis	IV
Charles and the	The the second second second	Rating	1 V
A CONTRACT OF A CONTRACT OF	No. Contraction and a second second	City of Chehalis	50 feet
A CARGE AND A	Contraction of the second s	Buffer Width	50 1001
		Wetland Size	0.06 acre onsite
		<b>Cowardin Classification</b>	PEMAB
	Strend Harth Street 1	HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-125
		Upland Data Sheet (s)	DP-126, DP-144, and MP- 24
国际公司		Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by soft rush, creeping buttercup, water plantain, and tufted		
Vegetation	hairgrass.		
Soils	Hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.		
Hydrology	Hydrology for Wetland P is provide surface runoff from adjacent upland		table, direct precipitation, and
Rationale for	Wetland boundaries were determine	ed by slight topographic dro	p and a transition to a more
Delineation	predominant hydrophytic plant con	nmunity.	_
Rationale for Local Rating	Local rating is based upon the curre	ent WSDOE wetland rating sy	vstem per CMC 17.23.010.D.
8	Wetland Fun	ctions Summary	
Water Quality	Wetland P has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland P's score for Water Quality Functions using the 2014 method is moderate (6).		
Hydrologic	Wetland P has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland P's score for Hydrologic Functions using the 2014 method is moderate (6).		
Habitat	Habitat functions provided by Wetland P are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland P's score for Habitat Functions using the 2014 method is low (3).		
Buffer	Much of the buffer area surroundi	ng Wetland P is degraded du	to the presence of mowed

#### Table 18. Wetland P Summary.

WETLAND Q – INFORMATION SUMMARY				
Location:	Located on the southern portion of			
	and an an and a state	Local Jurisdiction	City of Chehalis	
A DELAN		WRIA	23 – Upper Chehalis	
Manufacture and		WSDOE Rating	IV	
and the second second		(Hruby, 2014)	1 V	
the survey and the	en all de la constant	City of Chehalis	IV	
		Rating		
	(A) (1995年)中国的第三	City of Chehalis	50 feet	
<b>建立了海道。</b> 这个		Buffer Width		
<b>这些"我们的"</b>	CONTRACTOR OF THE STATE OF THE ST	Wetland Size	0.006 acre onsite	
2428年8月4日日日		Cowardin Classification	PEMAB	
	Carrier Carlos Park	HGM Classification	Depressional	
		Wetland Data Sheet(s)	DP-127	
		Upland Data Sheet (s)	DP-126, MP-24	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by soft rush, meadow foxtail, and hairy cat's ear.			
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.			
Hydrology	Hydrology for Wetland Q is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for Delineation	Wetland boundaries were determine predominant hydrophytic plant con		p and a transition to a more	
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
		ctions Summary		
Water Quality	Wetland Q has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland Q's score for Water Quality Functions using the 2014 method is moderate (6).			
Hydrologic	Wetland Q has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland Q's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland Q are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland Q's score for Habitat Functions using the 2014 method is low (3).			
Buffer	Much of the buffer area surroundi	ng Wetland Q is degraded du	ie to the presence of mowed	
Condition	agricultural fields.			

# Table 19. Wetland Q Summary.

	WETLAND R – INFO	ORMATION SUMMARY		
Location:	Located on the southern portion of	f the subject property.		
		Local Jurisdiction	City of Chehalis	
	and the second second	WRIA	23 – Upper Chehalis	
		WSDOE Rating	III	
-	and the second se	(Hruby, 2014)	111	
		City of Chehalis	III	
		Rating	111	
		City of Chehalis	80 feet	
	A CONTRACT OF CONTRACTOR	Buffer Width		
		Wetland Size	0.48 acre onsite	
	STATISTICS AND STATISTICS	Cowardin Classification	PEMABd	
		HGM Classification	Depressional	
		Wetland Data Sheet(s)	MP-25 and MP-26	
R. ANN		Upland Data Sheet (s)	DP-129, DP-130, and DP- 138	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by soft rush, creeping buttercup, colonial bentgrass, and common velvet grass.			
Soils	Hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.			
Hydrology	Hydrology for Wetland R is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a transition to a more predominant hydrophytic plant community.			
Rationale for Local Rating	Local rating is based upon the curre	ent WSDOE wetland rating sy	ystem per CMC 17.23.010.D.	
		ctions Summary		
Water Quality	Wetland R has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland R's score for Water Quality Functions using the 2014 method is moderate (6).			
Undrologia	Wetland R has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland R's score for Hydrologic Functions using the 2014 method is moderate (6).			
Hydrologic	in the contributing basin. However	er, this function is limited by	the minimal depth of storage.	
Habitat	in the contributing basin. However	er, this function is limited by the Functions using the 2014 methe tland R are low due to a lack habitat features that increase h in the surrounding landscape wever, additional habitat valu gon white oak and riparian ar	the minimal depth of storage. nod is moderate (6). of overall habitat complexity, abitat suitability. In addition, due to the presence of high- e is provided by the presence reas) in close proximity to the	
	in the contributing basin. However Wetland R's score for Hydrologic F Habitat functions provided by Wet plant species richness, and special F there is a lack of accessible habitat intensity land uses in the area. Ho of two WDFW PHS habitats (Ore	er, this function is limited by the Functions using the 2014 methe tland R are low due to a lack habitat features that increase h in the surrounding landscape wever, additional habitat valu gon white oak and riparian ar pitat Functions using the 2014	the minimal depth of storage. nod is moderate (6). of overall habitat complexity, abitat suitability. In addition, due to the presence of high- e is provided by the presence reas) in close proximity to the method is low (4).	

# Table 20. Wetland R Summary.

Table 21. wettall		ORMATION SUMMARY		
Location:	Located on the southern portion of	the subject property.		
		Local Jurisdiction	City of Chehalis	
		WRIA	23 – Upper Chehalis	
	The plant	WSDOE Rating (Hruby, 2014)	III	
State State		City of Chehalis		
and the second s	Sector States and the sector of the sector of the	Rating	III	
	a second and a second second	City of Chehalis		
	Constitution of the second second	Buffer Width	80 feet	
A State of the second	and the second sec	Wetland Size	0.05 acre onsite	
	a contraction of the	Cowardin Classification	PEMB	
		HGM Classification	Depressional	
		Wetland Data Sheet(s)	DP-128	
		Upland Data Sheet (s)	DP-129	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by colonial bentgrass, common velvet grass, and tall fescue.			
Soils	Hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface) were observed.			
Hydrology	surface runoff from adjacent upland	Hydrology for Wetland S is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for Delineation	Wetland boundaries were determine predominant hydrophytic plant con		p and a transition to a more	
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
		ctions Summary		
Water Quality	Wetland S has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland S's score for Water Quality Functions using the 2014 method is moderate (6).			
Hydrologic	Wetland S has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland S's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland S are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. However, additional habitat value is provided by the presence of two WDFW PHS habitats (Oregon white oak and riparian areas) in close proximity to the wetland. Wetland S's score for Habitat Functions using the 2014 method is moderate (4).			
Buffer	Much of the buffer area surroundi			
Condition	agricultural fields.			

# Table 21. Wetland S Summary.

WETLAND T – INFORMATION SUMMARY					
Location:	Located on the southeast portion o				
Contraction of the		Local Jurisdiction	City of Chehalis		
	a sufficient	WRIA	23 – Upper Chehalis		
		WSDOE Rating	IV		
		(Hruby, 2014)	1 V		
	Bar Alla Mart	City of Chehalis	IV		
		Rating			
A DOMESTIC STA	The second distribution of the	City of Chehalis	50 feet		
and the state	Contraction of the second	Buffer Width	0.07		
	ANN AND AND AND AND AND AND AND AND AND	Wetland Size	0.07 acre onsite		
Alexander Al		Cowardin Classification	PEMB		
Why Carry and A		HGM Classification	Depressional		
	A STATE A STATE	Wetland Data Sheet(s)	MP-27		
		Upland Data Sheet (s)	DP-131		
		Boundary Flag color	Orange		
Dominant Vegetation	Wetland vegetation is dominated by colonial bentgrass, common velvet grass, and tall fescue.				
Soils	Hydric soil indicators F6 (Redox Dark Surface) and A12 (Thick Dark Surface) were observed.				
Hydrology	Hydrology for Wetland T is provid surface runoff from adjacent upland	Hydrology for Wetland T is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for	Wetland boundaries were determin	ned by slight topographic dro	p and a transition to a more		
Delineation	predominant hydrophytic plant community.				
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.				
		ctions Summary			
Water Quality	Wetland T has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland T's score for Water Quality Functions using the 2014 method is moderate (6).				
Hydrologic	Wetland T has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland T's score for Hydrologic Functions using the 2014 method is moderate (6).				
Habitat	Habitat functions provided by Wetland T are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland T's score for Habitat Functions using the 2014 method is low (3).				
Buffer	Much of the buffer area surround	ing Wetland T is degraded du	ie to the presence of mowed		
Condition	agricultural fields.				

# Table 22. Wetland T Summary.

	WETLAND U – INFO	ORMATION SUMMARY	
Location:	Located on the southeast portion of		
	Children Children	Local Jurisdiction	City of Chehalis
		WRIA	23 – Upper Chehalis
and the second second		WSDOE Rating	IV
ADERICA	Add An Add a	(Hruby, 2014)	1 V
All water and the state		City of Chehalis	IV
and the state of the second state	and the second se	Rating	1 V
A SAME OF UN	and the first the description of the	City of Chehalis	50 feet
		Buffer Width	
NEW MUST	Carlos and the second	Wetland Size	0.02 acre onsite
些国行る第二	19-12 (1)、你们这些人的 <u>人</u> 。	<b>Cowardin Classification</b>	PEMB
TA SUMAN	WERE AND	HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-132
		Upland Data Sheet (s)	DP-133
	ZSNAMU ANTI I XXII ALVAZAN ZANAZA UN	Boundary Flag color	Orange
Dominant Vegetation	Wetland vegetation is dominated by soft rush and reed canarygrass.		
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.		
Hydrology	Hydrology for Wetland U is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.		
Rationale for	Wetland boundaries were determin	ed by slight topographic dro	p and a transition to a more
Delineation	predominant hydrophytic plant com	nmunity.	
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.		
		ctions Summary	
Water Quality	Wetland U has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland U's score for Water Quality Functions using the 2014 method is moderate (6).		
Hydrologic	Wetland U has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland U's score for Hydrologic Functions using the 2014 method is moderate (6).		
Habitat	Habitat functions provided by Wetland U are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland U's score for Habitat Functions using the 2014 method is low (3).		
Buffer	Much of the buffer area surroundi	ng Wetland U is degraded du	ue to the presence of mowed
Condition	agricultural fields.		

# Table 23. Wetland U Summary.

	WETLAND V – INFO	DRMATION SUMMARY	
Location:	Located on the eastern portion of t		
	And the second	Local Jurisdiction	City of Chehalis
Martin Barren Barren	minutes The second second second second	WRIA	23 – Upper Chehalis
	Contraction of the Contraction	WSDOE Rating	IV
		(Hruby, 2014)	1 V
		City of Chehalis	IV
ALT SAM	S RALINE STREET, NO. 100	Rating	
A CARLER AND	Version Real Production and Compared	City of Chehalis	50 feet
169 San Car	<b>关于</b> "这种方式和个人做个的方	Buffer Width	0.10
和以上是對於於		Wetland Size	0.19 acre onsite
CAN SUN 13		Cowardin Classification	PEMAB
		HGM Classification	Depressional
		Wetland Data Sheet(s)	DP-134
Valle of		Upland Data Sheet (s)	DP-135
		Boundary Flag color	Orange
Dominant	Wetland vegetation is dominated by	v a rush species and reed cana	rvgrass.
Vegetation			
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.		
Hydrology	Hydrology for Wetland V is provided by a seasonally high-water table, direct precipitation, and		
Rationale for	surface runoff from adjacent uplands. Wetland boundaries were determined by slight topographic drop and a transition to a more		
Delineation	predominant hydrophytic plant cor		p and a transition to a more
Rationale for		innunity.	
Local Rating	Local rating is based upon the curre	ent WSDOE wetland rating sy	vstem per CMC 17.23.010.D.
	Wetland Fun	ctions Summary	
	Wetland V has a moderate potentia		to the lack of a surface water
Water Orality	outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated		
Water Quality	in a sub-basin with water quality is	sues. Wetland V's score for W	Vater Quality Functions using
	the 2014 method is moderate (6).		
	Wetland V has a moderate potenti		
Hydrologic	sub-basin where flooding is a problem down gradient and the presence of intensive land uses		
gg	in the contributing basin. However,	-	1 0
	Wetland V's score for Hydrologic I		
	Habitat functions provided by Wetland V are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition,		
Uabitat			
Habitat	there is a lack of accessible habitat intensity land uses in the area. Wet		
	is moderate (3).	and v 5 score for mapital pull	cuons using the 2014 method
Buffer	Much of the buffer area surround	no Wetland V is deoraded di	ie to the presence of mowed
Condition	agricultural fields.	ing reclarice r to degraded de	to the presence of mowed
Condition	"Strouturur fields.		

# Table 24. Wetland V Summary.

Location:	Located on the eastern portion of t	ne subject property. Local Jurisdiction WRIA	City of Chehalis	
		WRIA		
			23 – Upper Chehalis	
		WSDOE Rating	IV	
100		(Hruby, 2014)	1 V	
	A MARRAD	City of Chehalis	IV	
N.S.		Rating		
States Aller 1989	NO. DEC.	City of Chehalis	50 feet	
		Buffer Width		
	A DE LA DE	Wetland Size	0.50 acre onsite	
1 here	AVEL	Cowardin Classification	PFO/SS/EMBd	
aler of splan / marine		HGM Classification	Slope	
	S. HANNELS CREATING	Wetland Data Sheet(s)	MP-7 and MP-8	
1527255		Upland Data Sheet (s)	DP-137	
The Association of the second		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation onsite is dominated by reed canarygrass.			
	Hydric soil indicator F6 (Redox Dark Surface) was observed.			
	Hydrology for Wetland W is provided by a seasonally high-water table, direct precipitation, hillside seeps, and surface runoff from adjacent uplands.			
Rationale for	Wetland boundaries were determined by slight topographic changes and a transition to a more			
	predominant hydrophytic plant community.			
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
Wetland Functions Summary				
Wetland W has moderate potential to improve water quality due to the minor slope in an area				
	with runoff from an adjacent road			
	greater than 25 percent of the wetla			
	water quality issues. Wetland W's score for Water Quality Functions using the 2014 method is			
	moderate (6).			
	Wetland W has a moderate potenti			
	sub-basin where flooding is a problem down gradient and the presence of a roadway upslope			
	which generates excess surface runoff. However, this function is limited due to the absence of			
	less than 90 percent dense, rigid plant cover to reduce the velocity of surface flows. Wetland			
	W's score for Hydrologic Functions using the 2014 method is moderate (6).			
	Habitat functions provided by Wetland W are low due to a lack of special habitat features. There is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity			
	land uses in the area. However, the unit contains three Cowardin classes which provides greater			
	interspersion that increases habitat suitability. Wetland W's score for Habitat Functions using			
	the 2014 method is low (3).			
	Much of the buffer area surrounding	ng Wetland W is degraded du	ie to the presence of mowed	
	agricultural fields.			

# Table 25. Wetland W Summary.

	WETLAND X – INFORMATION SUMMARY			
<b>Location:</b> Located on the southeast portion of the subject property.				
		Local Jurisdiction	City of Chehalis	
		WRIA	23 – Upper Chehalis	
	A. Contraction of the second s	WSDOE Rating	III	
	and the second s	(Hruby, 2014)		
		City of Chehalis	III	
New York		Rating City of Chehalis		
		Buffer Width	80 feet	
W	No. I Statement of the Statement of the second	Wetland Size	0.009 acre onsite	
norte en alla de la d	Carrier and the second second second second	Cowardin Classification	PEMB	
		HGM Classification	Depressional	
	THE AND	Wetland Data Sheet(s)	DP-139	
的时代		Upland Data Sheet (s)	DP-138	
		Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by slough sedge and common velvet grass.			
Soils	Hydric soil indicator F6 (Redox Dark Surface) was observed.			
Hydrology	Hydrology for Wetland X is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for	Wetland boundaries were determined by slight topographic drop and a transition to a more			
Delineation	predominant hydrophytic plant community.			
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
		ctions Summary		
Water Quality	Wetland X has a moderate potential to improve water quality due to the lack of a surface water outlet, the surrounding agricultural fields generating pollutants, and the wetland being situated in a sub-basin with water quality issues. Wetland X's score for Water Quality Functions using the 2014 method is moderate (6).			
Hydrologic	Wetland X has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland X's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland X are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. However, additional habitat value is provided by the presence of two WDFW PHS habitats (Oregon white oak and riparian areas) in close proximity to the wetland. Wetland X's score for Habitat Functions using the 2014 method is low (3).			
Buffer Condition	Much of the buffer area surrounding Wetland X is degraded due to the presence of mowed agricultural fields.			

#### Table 26. Wetland X Summary.

	WETLAND Y – INFORMATION SUMMARY			
Location:				
		Local Jurisdiction	City of Chehalis	
and the second second		WRIA	23 – Upper Chehalis	
-2-16-2	and in the second	WSDOE Rating	IV	
		(Hruby, 2014)	1 V	
		City of Chehalis	IV	
Sales a Cold	the second s	Rating		
		City of Chehalis	50 feet	
		Buffer Width	0.04	
	and the second s	Wetland Size	0.01 acre onsite	
the stand of the day	and the second	Cowardin Classification	PEMAB	
	adding Mill start	HGM Classification	Depressional, Slope	
		Wetland Data Sheet(s)	DP-140	
		Upland Data Sheet (s)	DP-106, DP-142	
	中国的大利学院和新生活自然中国	Boundary Flag color	Orange	
Dominant Vegetation	Wetland vegetation is dominated by colonial bentgrass and creeping buttercup.			
Soils	Hydric soil indicators F6 (Redox Dark Surface) and A11 (Depleted Below Dark Surface) were observed.			
Hydrology	Hydrology for Wetland Y is provided by a seasonally high-water table, direct precipitation, and surface runoff from adjacent uplands.			
Rationale for Delineation	Wetland boundaries were determined by slight topographic drop and a transition to a more predominant hydrophytic plant community.			
Rationale for Local Rating	Local rating is based upon the current WSDOE wetland rating system per CMC 17.23.010.D.			
Wetland Functions Summary				
Water Quality	Wetland Y has a moderate potential to improve water quality due to the presence of an intermittent outlet, the surrounding agricultural fields and nearby septic system generating.			
Hydrologic	Wetland Y has a moderate potential to improve hydrologic functions due to its location in a sub-basin where flooding is a problem down gradient and the presence of intensive land uses in the contributing basin. However, this function is limited by the minimal depth of storage. Wetland Y's score for Hydrologic Functions using the 2014 method is moderate (6).			
Habitat	Habitat functions provided by Wetland Y are low due to a lack of overall habitat complexity, plant species richness, and special habitat features that increase habitat suitability. In addition, there is a lack of accessible habitat in the surrounding landscape due to the presence of high-intensity land uses in the area. Wetland Y's score for Habitat Functions using the 2014 method is low (3).			
Buffer	Much of the buffer area surround	ing Wetland Y is degraded du	ie to the presence of mowed	
Condition	agricultural fields.			

# Table 27. Wetland Y Summary.

# **5.3 Agricultural Ditches**

SVC's site investigations identified five agricultural drainage ditches (Ditches 1 through 5), one of which is considered a regulated stream (Ditch 1). Additionally, Berwick Creek was identified approximately 250 feet offsite to the south of the site and is not discussed in detail in this report. No other potentially regulated waterbodies were identified on or within 300 feet of the site. The conditions of the agricultural ditches onsite are characterized as maintained, artificially created agricultural drainage features constructed in upland soils. The onsite ditches are linear in shape which is distinctive of manmade conditions. The identified agricultural ditches are summarized below.

# Ditch 1

Ditch 1 was identifed onsite entering the subject property from the north, traverses the northwest corner of the subject property, where Ditch 1 meets Ditch 2. Ditch 1 originates offsite to the northeast of the subject property in the roadside ditch along Jackson Highway. Flows for Ditch are supplied by surface runoff, roadway runoff from Jackson Highway, and hillsides seeps. Onsite sections of the stream are generally straightened channels with sandy, silty substrate. Non-native, invasive reed canarygrass or other native grass species are prevalent along and within the stream channel.

Due to the fact this is a straightened channel with no pool/riffle structure with prevalence of nonnative invasive vegetation, a lack of suitable substrate, a lack of riparian vegetation, and the seasonality of flows, it is likely this stream provides poor fish habitat. Additionally, this ditch is not documented as salmonid habitat or as a Type F water onsite or immediately downstream of the subject property. Due to the lack of documented salmonid presence and the seasonality of flow this stream is considered a Type Ns waterbody per CMC 17.25.020.5. A summary of Ditch 1 is provided in Table 28.

# Ditch 2

Ditch 2 was identifed onsite entering the subject property from the east, traversing the northern portion of the subject property. In the northwest corner of the site Ditch 2 connects with Ditch 1 and continues offsite to the west. Flows for Ditch 2 are supplied by surface runoff. Onsite sections of this drainage are generally straightend channels with sandy, silty substrate. Non-native, invasive reed canarygrass or other native and non-native grass species are prevalent along and within the excavated channel.

This ditch is an excavated and artificially maintined straightened channel with no pool/riffle structure, limited presence of water, and contains a prevalence of non-native invasive vegetation, lacks suitable substrate and significant vegetative cover, and as such, does not provide suitable habitat for protected species. Additionally, this ditch is not documented as salmonid habitat or as a typed waterbody onsite or immediately downstream of the subject property. This feature appears to have been excavated in uplands, conveys surface runoff from the site and meets the definition of a drainage ditch per CMC 17.21.030. A summary of Ditch 2 is provided in Table 29.

# Ditch 3

Ditch 3 was identifed onsite entering the subject property from the east, traversing the northern portion of the subject property. Flows for Ditch 3 are supplied by surface runoff. Onsite sections of this drainage are generally straightend channels with sandy, silty substrate. Non-native, invasive reed canarygrass or other native and non-native grass species are prevalent along and within the excavated channel.

This ditch is an excavated and artificially maintined straightened channel with no pool/riffle structure, limited presence of water, and contains a prevalence of non-native invasive vegetation, lacks suitable substrate and significant vegetative cover, and as such, does not provide suitable habitat for protected species. Additionally, this ditch is not documented as salmonid habitat or as a typed waterbody onsite or immediately downstream of the subject property. This feature appears to have been excavated in uplands, conveys surface runoff from the site and meets the definition of a drainage ditch per CMC 17.21.030. A summary of Ditch 3 is provided in Table 30.

#### Ditch 4

Ditch 4 was identifed onsite entering the subject property from the east, traversing the center portion of the subject property. Flows for Ditch 4 are supplied by surface runoff. Onsite sections of this drainage are generally straightend channels with sandy, silty substrate. Non-native, invasive reed canarygrass or other native and non-native grass species are prevalent along and within the excavated channel.

This ditch is an excavated and artificially maintined straightened channel with no pool/riffle structure, limited presence of water, and contains a prevalence of non-native invasive vegetation, lacks suitable substrate and significant vegetative cover, and as such, does not provide suitable habitat for protected species. Additionally, this ditch is not documented as salmonid habitat or as a typed waterbody onsite or immediately downstream of the subject property. This feature appears to have been excavated in uplands, conveys surface runoff from the site and meets the definition of a drainage ditch per CMC 17.21.030. A summary of Ditch 4 is provided in Table 31.

#### Ditch 5

Ditch 5 was identifed onsite entering the subject property from the east, traversing the southern portion of the subject property. Flows for Ditch 5 are supplied by surface runoff. Onsite sections of this drainage are generally straightend channels with sandy, silty substrate. Non-native, invasive reed canarygrass or other native and non-native grass species are prevalent along and within the excavated channel.

This ditch is an excavated and artificially maintined straightened channel with no pool/riffle structure, limited presence of water, and contains a prevalence of non-native invasive vegetation, lacks suitable substrate and significant vegetative cover, and as such, does not provide suitable habitat for protected species. Additionally, this ditch is not documented as salmonid habitat or as a typed waterbody onsite or immediately downstream of the subject property. This feature appears to have been excavated in uplands, conveys surface runoff from the site and meets the definition of a drainage ditch per CMC 17.21.030. A summary of Ditch 5 is provided in Table 32.

DIT(	DITCH 1 INFORMATION SUMMARY				
- in		Ditch Name	Ditch 1		
		WRIA	23		
	Contraction of the second	Local Jurisdiction	City of Chehalis		
		DNR Water Type	N/A		
	and the	Average Width	3.5 feet		
		Buffer Width	50		
		Documented Fish Use	None		
Location of Ditch	Located in a well-defined channel on the northern portion of the subject property, Ditch 1 enters the project area through a 24-inch concrete culvert under Jackson Highway.				
Connectivity (where stream flows from/to)	Ditch 1 conveys seasonal flow to the southwest for approximately 365 linear feet where it connects with Ditch 2 and then flows northwest approximately 390 linear feet and off-site, eventually to Dillenbough Creek, located approximately 0.5 mile northwest of the site.				
Riparian/Buffer Condition	The buffer is degraded due to heavy grazing/mowing and presence of non-native invasive species.				

Table 28. Ditch 1 Summary

DITCH 2 INFORMATION SUMMARY				
		Ditch Name	Ditch 2	
		WRIA	23	
	a contraction of the	Local Jurisdiction	City of Chehalis	
	Autor Sta	DNR Water Type	N/A	
		Average Width	3 feet	
		Buffer Width	N/A	
		Documented Fish Use	None	
Location of Ditch		well-defined channel on the pro- utheast to the northwest for ap		
<b>Connectivity (where ditch flows from/to)</b> southeast side of the subject		onveys intermittent flows wild de of the site to Ditch 1 on the ect property, through a 15-inch d access road.	northwest corner	
Riparian/Buffer ConditionBuffer notis degrade		equired. However, the area ad due to heavy grazing/mowing invasive species.		

Table 29. Ditch 2 Summary.

DITCH 3 INFORMATION SUMMARY			
		Ditch Name	Ditch 3
		WRIA	23
		Local Jurisdiction	City of Chehalis
		DNR Water Type	N/A
		Average Width	2 feet
		Buffer Width	N/A
ar 22 2015 11 48		Documented Fish Use	None
Location of Ditch	Located in a well-defined channel that bisects the subject property from the southeast to the northwest. Ditch 3 is located within an approximately 2–foot wide channel for approximately 2,040 linear feet.		
Connectivity (where ditch flows from/to)	Ditch 3 conveys intermittent flows from southeast to the northwest and meets Ditch 4 through a 12-inch culvert under an onsite gravel access road.		
Riparian/Buffer Condition	Buffer not required. However, the area adjacent to the ditch is degraded due to heavy grazing/mowing and presence of non-native invasive species.		

Table 30. Ditch 3 Summary.

DITCH 4 INFORMATION SUMMARY			
	CAS	Ditch Name	Ditch 4
and the second	i de la chi	WRIA	23
Contract of the second		Local Jurisdiction	City of Chehalis
CE MAR PARTIE STATE		DNR Water Type	N/A
Martin Contraction		Average Width	2.5 feet
A Constant of the	an en	Buffer Width	N/A
		Documented Fish Use	None
Location of Ditch	of the s northw feet on off-site	d in a well-defined channel in th subject property crossing from the yest. Ditch 4 comprises approxim site and exits the property in the e Chehalis Port Property ditches.	e southeast to the nately 2,100 linear e west to join the
Connectivity (where ditch flows from/to) Ditch 4 conveys intermittent flows proceeding from southeast side of the site to western side of the property.			
Riparian/Buffer Condition	ditch i	not required. However, the are is degraded due to heavy grazi ce of non-native invasive species.	ng/mowing and

Table 31. Ditch 4 Summary.

DITCH 5 INFORMATION SUMMARY			
	Ditch Name	Ditch 5	
	WRIA	23	
	Local Jurisdiction	City of Chehalis	
	DNR Water Type	N/A	
	Average Width	1.5 feet	
	Buffer Width	N/A	
	Documented Fish Use	None	
Location of Ditch Located in a well-defined channel on the southern p the subject property, crossing from the southeast to for approximately 1,270 linear feet onsite.			
Connectivity (where ditch flows from/to)	Ditch 5 conveys intermittent flows from the southeas corner of the site west into the Chehalis Port Propert ditches.		
Riparian/Buffer ConditionBuffer not required. However, the area adjacent to is degraded due to heavy grazing/mowing and pr non-native invasive species.			

#### Table 32. Ditch 5 Summary.

# Chapter 6. Regulatory Considerations

# 6.1 Local Critical Area Requirements

During the multiple site investigations in 2018 and 2019, SVC identified and delineated 25 potentially regulated wetlands (Wetlands A through Y) and five ditches (Ditches 1 through 5) on the subject property. No other potentially regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified on or within 225 feet of the subject property.

#### 6.1.1 Buffer Requirements

While CMC 17.23.010.D specifies the use of the prior WSDOE wetland rating system (Hruby, 2004), the city is currently preparing to transition to the current wetland rating system utilized by the WSDOE (Hruby, 2014); as such, the revised 2014 wetland rating system was used for this assessment. Category IV wetlands generally provide low levels of function; they are typically more disturbed, smaller, and/or more isolated in the landscape than Category I, II, or III wetlands. Category IV wetlands provide low levels of functions and score less than 16 out of 27 points on the *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014). Category III wetlands score between 16 and 19 points generally provide a moderate level of function, have usually been disturbed in some way, and are often less diverse and/or more isolated in the landscape than Category III wetlands.

Wetlands A-Q, T-W, and Y are classified as Category IV wetlands with low habitat scores subject to standard 50-foot buffers and Wetlands R, S, and X are classified as Category III wetlands with low habitat scores subject to standard 80-foot buffers per CMC 17.23.030.C. Ditch 1 is considered a seasonal, non-fish habitat stream (Type Ns) subject to a standard 50-foot buffer per CMC 17.25.030.B.5. Buildings and other structures require an additional 10-foot setback per CMC 17.21.086.B from the outer edge of the wetland buffers, stream buffers, or from edge of critical area when no buffer is required.

#### 6.1.2 Mitigation Sequencing

The proposed industrial redevelopment of the site will require direct and indirect impacts to onsite wetlands and ditches. Mitigation sequencing per CMC 17.21.087.B is provided below to discuss the avoidance and minimization measures for the proposed impacts.

#### 1. Avoiding the impact altogether by not taking a certain action or parts of an action.

The project has been carefully designed to avoid critical areas by utilizing the developable upland areas on the center portion of the site while protecting larger wetlands near the only identified onsite drainage that contains flows that are likely regulated, Ditch 1; however, due to the distribution of small wetlands and the need for a large warehouse and associated infrastructure, direct and indirect impacts are unavoidable and necessary in order to achieve the Applicant's objectives. Due to the scope of the proposed project and need for a large structure, a smaller building footprint is not feasible. The proposed project minimizes direct impacts to identified critical areas with identified surface connectivity to downstream waters associated with offsite Berwick and Dillenbaugh Creeks; these actions will directly affect potentially jurisdictional WOTUS regulated under Section 404 of the CWA by the USACE. It should also be noted that careful site planning was employed to avoid direct impacts to cultural resources identified within Wetland T, direct impacts to Wetlands T, W, and Y. As such, the proposed project has been designed to avoid impacts to the identified critical areas to the greatest extent feasible.

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts.

The proposed project utilizes viable upland space in the center portion of the site to the greatest extent feasible in order to accommodate the size and scale of the industrial warehouse and associated infrastructure required while meeting the project requirements. The proposed project has minimized impacts by minimizing impacts to more sensitive areas surrounding Ditch 1 and by rerouting all surface water and conveying stormwater through bypasses. Hydrology for wetlands and drainages proposed for fill activities will be conveyed through the proposed modified drainage network (i.e. stormwater bypasses). Onsite hydrology will ultimately maintain connectivity through a proposed outlet to offsite location that will maintain hydrology to locations down basin. The proposed project completely or mostly avoids direct impacts to identified critical areas with identified surface connectivity to downstream waters associated with offsite Berwick and Dillenbaugh Creeks. In addition, all appropriate best management practices (BMPs) and temporary erosion and sediment control (TESC) measures will be implemented for the duration of project activities to minimize potential construction impacts to the remaining onsite critical areas.

# 3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

Onsite, in-kind mitigation to restore the affected environment is not feasible due to the large mitigation and buffer areas that would be required to offset the proposed impacts.

# 4. Reducing or eliminating the impact over time by preservation and maintenance operations.

The remaining wetlands, stream, and associated protective buffer areas will likely be placed in a separate tract or easement as a permanent protective mechanism per CMC 17.21.085.B with protective fencing along the perimeters to deter intrusion per CMC 17.23.056.A, as required by the City.

# 5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

Compensatory mitigation for the wetland fill and permanent buffer impacts is proposed to be provided through the purchase of credits from the CBWMB as allowed per CMC 17.23.053.D. Use of a wetland mitigation bank will likely provide a higher level of ecological lift and restoration of watershed level functions than small offsite, in-kind permittee responsible mitigation actions. As such, the proposed use of credits purchased from the CBWMB will result in a net gain in ecological functions for the upper Chehalis watershed over the existing degraded conditions of the wetlands proposed to be impacted. As such, the proposed project will result in no net loss of wetland functions within the Upper Chehalis watershed. Refer to Chapter 7 for more details regarding the Conceptual Mitigation Plan.

#### 6. Monitoring the impact and the compensation project and taking appropriate corrective measures.

No onsite mitigation is proposed at this time. As such, monitoring is not required or proposed.

# 6.2 State and Federal Considerations

# 6.2.1 State Requirements

Wetlands A-Y and Ditch 1 are likely to be regulated through the WSDOE under the Revised Code of Washington (RCW) 90.48. However, Ditches 2-5 are not expected to be regulated by WSDOE as they are artificial drainages intentionally excavated from uplands used for agricultural purposes and do not meet stream definition criteria.

# 6.2.2 Federal Requirements

Wetlands A through Y all meet the current wetland delineation criteria, as defined in the 1987 USACE Wetland Delineation Manual (Environmental Laboratory, 1987), in that they 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". However, their position in the landscape and lack of direct connectivity to Waters of the United States (WOTUS) and their unlikely significance in the watershed, the majority of these wetlands are not likely regulated by the USACE under Section 404 of the CWA by the existing joint 2008 guidance from USACE and EPA or by the new definition of WOTUS which took effect on June 22, 2020, both of which are discussed below. However, the Applicant does not seek an approved jurisdictional determination (AJD) from the USACE at this time. Rather, the project proposal assumes that the USACE will assert jurisdiction over onsite wetlands until formal AJD is requested

# 6.2.2.1 Waters of the United States Following Repeal of Clean Water Rule

On February 28, 2017, an Executive Order, "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States Rule" was issued to require the EPA and USACE to review or rescind the Clean Water Rule published in the Federal Register on June 29, 2015. The 2015 Clean Water Rule was rescinded in October 2019 and is no longer effective as of December 23, 2019 as described in the Federal Register (USACE and EPA, 2019). As such, the definition of WOTUS is currently based on the 2008 joint memorandum from the United States Environmental Protection Agency (EPA) and USACE.

In the December 2, 2008 memorandum from the Environmental Protection Agency (EPA) and USACE, joint guidance is provided that describes waters that are to be regulated under section 404 of the CWA (USACE and EPA, 2008). This memorandum was amended on February 2, 2012 where the EPA and USACE issued a final guidance letter on waters protected by the CWA (EPA and USACE, 2012).

The 2012 guidance describes the following waters where jurisdiction would be asserted: 1) traditional navigable waters, 2) interstate waters, 3) wetlands adjacent to traditional navigable waters, 4) non-navigable tributaries of traditional navigable waters that are relatively permanent meaning they contain water at least seasonally (e.g. typically three months and does not include ephemeral waters), and 5) wetlands that directly abut permanent waters. The regulated waters are those associated with naturally occurring waters and water courses and not artificial waters (i.e. stormwater pond outfalls). The 2012 memorandum further goes on to describe waters where jurisdiction would likely require further analysis: i) Tributaries to traditional navigable waters or interstate waters, ii) Wetlands adjacent to

jurisdictional tributaries to traditional navigable waters or interstate waters, and iii) Waters that fall under the "other waters" category of the regulations.

Under the 2008 guidance, Ditch 1 is likely regulated by the USACE outright through category 4 above as it is considered a natural tributary to offsite Berwick Creek that contains at least seasonal flow. Wetlands E-G are potentially regulated by the USACE through category ii above as they are adjacent to potential jurisdictional tributaries of WOTUS (physical surface connection to Ditch 1). Wetlands I-K, R, S, and W are also potentially regulated by the USACE through category ii above as they may also be considered adjacent to jurisdictional tributaries should the extended surface connections through Ditches 2 and 3 be considered sufficiently to satisfy adjacency, but the evidence is less conclusive. Regardless, each of these wetlands (E-G, I-K, R, S, and W) would need to satisfy a significant nexus analysis to demonstrate jurisdiction. Wetlands A-D, H, M-Q, T-V, X and Y are unlikely to be regulated by the USACE due to their lack of direct surface water connection to traditional navigable waters or associated tributaries and lack of significance in the watershed. Further, Ditches 2-5 are not expected to be regulated by the USACE as they do not meet stream definition criteria to be considered regulated tributaries and are not constructed within wetlands. However, the Applicant does not seek an approved jurisdictional determination (AJD) from the USACE at this time. Rather, the project proposal assumes that the USACE will assert jurisdiction over onsite wetlands until formal AJD is requested.

# 6.2.2.2 Waters of the United States Following Navigable Waters Protection Rule

The Federal Register published "The Navigable Waters Protection Rule: Definition of "Waters of the United States"" on April 21, 2020. The Navigable Waters Protection Rule is the second step in reviewing and revising the definition of WOTUS as intended by the Executive Order "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States Rule." The Navigable Waters Protection Rule is effective as of June 22, 2020.

Once effective, the Navigable Waters Protection Rule will replace the "Definition of "Waters of the United States" – Recodification of Pre-Existing Rules" rule published on October 22, 2019 (repealing the Clean Water Rule) and the 2008 joint guidance memorandum from USACE and EPA. The potential regulatory classifications for the wetlands and ditches described under Section 6.2.2.2 will no longer apply after June 22, 2020 unless the effective date of the Navigable Waters Protection Rule is delayed by legal action.

Under the final Navigable Waters Protection Rule, the agencies interpret the term WOTUS to encompass: 1) the territorial seas and traditional navigable waters; 2) perennial and intermittent tributaries that contribute surface water flow to such waters; 3) certain lakes, ponds, and impoundments of jurisdictional waters; and 4) wetlands adjacent to other jurisdictional waters. The Navigable Waters Protection Rule specifies that WOTUS do not include: 1) groundwater, including groundwater drained through subsurface drainage systems; 2) ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools; 3) diffuse stormwater runoff and directional sheet flow over upland; 4) ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations; 5) prior converted cropland; 6) artificially irrigated areas that would revert to upland if artificial irrigation ceases; 7) artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters; 8) water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel; 9) stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff; 10) groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and 11) waste treatment systems.

Under the final Navigable Waters Protection Rule, a tributary is defined as a river, stream, or similarly occurring surface water channel that contributes surface water flow to a territorial sea or traditional navigable water in a typical year either directly or indirectly through other tributaries, jurisdictional lakes, ponds, or impoundments, or adjacent wetlands. A tributary must be perennial or intermittent in a typical year. "Intermittent" means that surface water flows continuously during certain times of the year and more than in direct response to precipitation. "Ephemeral" means that surface water flows or pools only in direct response to precipitation, such as rain or snowfall. A tributary does not lose its jurisdictional status if it contributes surface water flow in a typical year to a downstream jurisdictional water through a channelized non-jurisdictional surface water feature; a subterranean river; a culvert, dam, tunnel, or similar artificial feature; or through a debris pile, boulder field, or similar natural feature. Ephemeral features and other excluded artificial and natural features are not jurisdictional and do not become jurisdictional even if they episodically convey surface water from upstream relatively permanent jurisdictional waters to downstream jurisdictional waters in a typical year.

Under the final Navigable Waters Protection Rule, adjacent wetlands are subject to a different jurisdictional test than tributaries, lakes, ponds, and impoundments of jurisdictional wetlands. "Adjacent wetlands" are wetlands that: 1) abut a territorial seas or traditional navigable water, tributary, or a lake, pond, or impoundment of jurisdictional water; 2) are inundated from flooding from a territorial sea or traditional navigable water, or tributary, or from another jurisdictional lake, pond, or impoundment in a typical year; 3) are physically separated from a territorial seas, traditional navigable water, tributary, or a lake, pond, or impoundment of jurisdictional water only by a berm, bank, dune, or similar natural feature; or 4) are physically separated from a territorial sea or traditional navigable water, a tributary, or a lake, pond or impoundment of a jurisdictional water only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrological surface connection to the territorial seas or traditional navigable water, tributary, or lake, pond, or impoundment of a jurisdictional water in a typical year. An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year. Jurisdiction is severed when in a typical year, an artificial feature does not allow for a direct hydrologic surface connection between the wetland and the jurisdictional water, or the wetland is not inundated by flooding from a territorial sea, traditional navigable water, tributary, lake, pond, or impoundment of a jurisdictional water. Physically remote isolated wetlands (i.e. wetlands that do not abut, are separated by more than a natural berm from, are not inundated by flooding in a typical year from, and do not have a direct hydrologic surface connection in a typical year to a jurisdictional non-wetland water) are not adjacent wetlands under the final rule. Wetlands cannot be adjacent to other wetlands; wetlands can only be adjacent to the territorial seas, a traditional navigable water, a tributary, or a lake, pond, or impoundments of jurisdictional water.

Under the final Navigable Waters Protection Rule, ditches that are constructed in or relocate a tributary and meet the perennial or intermittent flow criteria are regulated as tributaries. Ditches that are constructed in adjacent wetlands and meet the perennial or intermittent flow criteria are similarly regulated as tributaries. In certain circumstances, ditches are constructed in adjacent wetlands and lack sufficient flow to be considered tributaries. These ditches may develop wetland conditions if not maintained and may be treated as adjacent wetlands subject to the permitting exemptions in 33 U.S.C 1344(f). All other ditches are excluded under the final rule.

Under the Navigable Waters Protection Rule, Ditch 1 is likely regulated through category 2 of WOTUS as a ditch excavated in a tributary contributing at least intermittent flow to offsite Berwick Creek. Ditches 2-5 are not likely to be regulated by USACE as these ditches are not relocated natural tributaries, have not been constructed in natural tributaries, and have not been constructed in adjacent wetlands. Wetlands E-G and J are potentially regulated as WOTUS as these wetlands abut a potentially regulated tributary (Ditch 1). Under Category 4 of the adjacent wetlands description above, adjacent wetlands include wetlands that are physically separated from a jurisdictional tributaries to be jurisdictional if the wetland is separated from the regulated tributary by an artificial dike, barrier, or similar structure that allows for a direct hydrological surface connection to a jurisdictional tributary. Wetlands I-K, R, S, and W are physically separated from Ditch 1 and the offsite tributary ditch to the west by the likely non-jurisdictional Ditches 2-5. Ditches 2-5 convey water and do not act as the barriers described by category 4 of the adjacent wetlands description. While Wetlands I-K, R, S, and W may indirectly contribute water to Ditch 1 and the offsite tributary ditch, these wetlands do not have a direct hydrological connection to the potentially regulated tributaries. Wetlands I-K, R, S, and W are unlikely to be regulated as WOTUS. Wetlands A-D, H, M-Q, T-V, X and Y are unlikely to be regulated by the USACE as these wetlands do not abut, receive flooding, or have a direct hydrologic surface connection to a potentially jurisdictional tributary. However, the Applicant does not seek an approved jurisdictional determination (AJD) from the USACE at this time. Rather, the project proposal assumes that the USACE will assert jurisdiction over onsite wetlands until formal AJD is requested.

# Chapter 7. Conceptual Mitigation Plan

The proposed compensatory mitigation actions for the project attempt to strike a balance between achieving project goals as well as a positive result in terms of ecological lift. In general, joint USACE and EPA rules have been established that require more careful mitigation planning efforts utilizing a watershed approach in site selection, establishment of enforceable performance standards, and preference for use of mitigation banks or ILF's wherever possible (USACE & EPA, 2008). The proposed wetland impacts and compensatory mitigation actions attempt to closely adhere to these rules while also utilizing the best available science (Granger et al., 2005; Hruby et al., 2009; Sheldon et al., 2005; and WSDOE, 2006). This chapter presents the mitigation details for the proposed industrial development project.

# 7.1 Purpose and Need

The purpose of the proposed project is to provide a large warehouse facility to expand commercial/industrial capacity within the City of Chehalis' Growth Management Area.

# 7.2 Description of Impacts

The Applicant proposes industrial redevelopment of the subject property to include a 1,001,615square-foot warehouse distribution center with loading docks, trailer stalls, paved areas for parking, truck and van loading, and maneuvering, and stormwater infrastructure. Ingress and egress to the site will be provided via entrances and exits along Jackson Highway on the northeastern portion of the subject property. The project has been carefully designed to avoid critical areas to the greatest extent feasible by utilizing the developable upland areas on the center portion of the site while limiting impacts to larger wetlands (Wetlands E and F); however, due to the distribution of small wetlands and the need for a large warehouse and associated infrastructure, direct and indirect impacts are unavoidable and necessary in order to achieve the Applicant's objectives. As such, the project proposes to directly impact approximately 133,813 square feet of low functioning, primarily Category IV wetlands (total fill of Wetlands A-D, I-U, X, and Y) and approximately 6,705 linear feet of ditch (Ditches 2-5). In addition, approximately 12,399 square feet of indirect wetland impacts (indirect impacts associated with Wetlands E, F, U, and W) and 2,258 square feet of stream buffer impacts are unavoidable. Any remnant drainage conveyances that supply drainage to these artificial ditches will be conveyed through stormwater bypasses to avoid downstream impacts. The proposed project minimizes direct impacts to identified critical areas with identified surface connectivity to downstream waters associated with offsite Berwick and Dillenbaugh Creeks; these actions will directly affect potentially jurisdictional Waters of the U.S. (WOTUS) regulated under Section 404 of the Clean Water Act (CWA) by the U.S. Army Corps of Engineers (USACE), including Wetland J, which is located near the perimeter of the site. It should also be noted that site plan revisions were made to avoid direct impacts to the larger wetlands (Wetlands E and F). A wetland function impact analysis is provided below for the wetlands proposed to be impacted.

• Water Quality: The wetlands proposed to be filled are depressional and slope wetlands that exhibit seasonal saturation and occasional flooding. In general, these wetlands provide only moderate water quality improvement potential despite the fact the units are very small and do not contain persistent, ungrazed vegetation to filter sediments and pollutants. With the purchase

of credits from the CBWMB, the project will result in a net increase in water quality functions within the Upper Chehalis watershed.

- **Hydrologic:** The primary sources of hydrology for the identified wetlands are direct precipitation, surface sheet flow from adjacent uplands, and a seasonally high groundwater table. Opportunity for these wetlands to provide hydrologic functions is moderate due to their small sizes, lack of storage capacity, and slope characteristics (Wetlands A and B). Given these characteristics, the purchase of credits from the CBWMB will likely increase hydrologic functions within the Upper Chehalis watershed.
- Habitat: The impacted wetlands provide minimal habitat functions due to low vegetation species richness, lack of multiple Cowardin classes and hydroperiods, and lack of habitat interspersion and special habitat features in general. Due to the low-functioning habitat conditions, the proposed wetland fill will result in limited habitat removal, and additional wetland habitat functions will be replaced and increased within the Upper Chehalis watershed through the purchase of credits from the CBWMB.

To ensure no effect to downstream areas, the proposed project will provide accommodations for all impacted flows to be rerouted around the project area to the same exit points. Engineered outlets for the rerouted flows will be carefully designed to ensure no impact to downstream hydrology. No net loss is anticipated as a result of ditch modifications as the on-site ditches that will be directly impacted do not meet wetland or stream criteria and do not provide substantial habitat functions. As the onsite Ditches 2-5 are not considered streams, no compensatory mitigation is proposed for alteration of these agricultural ditches.

# 7.3 Mitigation Strategy

The proposed compensatory mitigation actions are intended to compensate for lost wetland functions and values by providing additional wetland functions according to the needs of the watershed, and providing an overall improvement in the quality of wetland habitat and no net loss in habitat and ecological function. To achieve this, the objectives of the mitigation actions are to purchase credits from the CBWMB to compensate for unavoidable total fill of Wetlands A-D, I-U, X, and Y and approximately 12,399 square feet of indirect wetland impacts associated with the proximity of the project to Wetlands E, F, U, and W, while improving and restoring diminished water quality and habitat function. Therefore, the Conceptual Mitigation Plan will incorporate use of the mitigation bank to meet federal, state, and local requirements that are most appropriate for the wetlands.

# 7.3.1 Mitigation Bank Use

Mitigation Bank credits purchased from the CBWMB will provide wetland mitigation for the unavoidable wetland and permanent buffer impacts. These credits will restore critical wetland functions and will be the most ecologically preferable mitigation option for this project, when compared to other potential mitigation options located in the same watershed. The purchase of mitigation credits will result in an overall ecological lift over the existing degraded conditions of the wetland units, which currently provide little function or value to the watershed.

Onsite permittee-responsible mitigation is not feasible as this would make the site undevelopable due to the spatial area required for the mitigation with adequate associated buffers, and onsite mitigation was determined to be less ecologically beneficial. In addition, per the mitigation sequencing described in Section 6.1.2, the project has been redesigned and a reduction in impacts has been carefully

considered. Off-site permittee-responsible wetland mitigation has been carefully considered; however, no sites have been found which are available to the Applicant that would provide viable offsite, inkind permittee responsible mitigation that is also economically feasible. In general, permitteeresponsible mitigation is not as ecologically beneficial due to the lack of watershed benefits when compared to purchasing wetland bank credits which go towards a large, well-established mitigation site (in this case the nearly 177-acre Hanaford Valley site) which was carefully selected for ecological benefits. In addition, such mitigation banking sites have the advantage of well-established resources for maintenance and monitoring over a longer time frame to ensure success of the mitigation actions. Invasive species management may also be a limiting factor for offsite permittee responsible mitigation. The subject property is also not located within the service area of an approved in-lieu fee but is available within the service area of an approved wetland mitigation bank. As such, the purchase of mitigation bank credits from the CBMB will provide the best mitigation solution that will result in an ecological lift when compared to the degraded condition of the wetlands proposed to be filled and permanent buffer impacts.

Joint USACE and EPA rules (USACE & EPA, 2008) and interagency guidance (WSDOE & USACE 2006; Hruby et al., 2009) have been established that require more careful mitigation planning efforts utilizing a watershed approach in site selection, establishment of enforceable performance standards, and preference for use of mitigation banks or ILFs wherever possible. The subject property is located inside of the CBWMB service area and is located in the Hanaford Creek Valley, west of the Centralia Steam Plant. The location is in the floodplain of Big Hanaford Creek, a tributary to the Skookumchuck River, in the Upper Chehalis River basin (WRIA 23). The overarching mitigation goal of the CBWMB is to re-establish, rehabilitate and enhance forested, scrub-shrub, and emergent wetlands, and associated upland habitat within the floodplain which is beneficial for fish and wildlife species. Use of the mitigation bank credits purchased will meet the program and USACE goals while allowing the project to achieve no net loss of aquatic resource functions. Replacement ratios to be used for calculating mitigation bank credit purchases for direct impacts are listed below (Table 33). Indirect impacts are calculated at one half the ratio of direct impacts (E. Carnes, personal communication, September 1, 2020).

#### 7.3.2 Credit Purchase or Transfer Timing

Negotiations of terms of the mitigation bank credit purchase will be made with City staff with preliminary approvals of the proposed project by the City, WSDOE and USACE, after formal approval of the Conceptual Mitigation Plan by all appropriate agencies, via a Mitigation Bank Use Plan. Proof of credit purchase and transfer will be provided via a Statement of Sale from Lewis County. Prior to any impacts to wetlands, the Statement of Sale will be provided to the USACE and the City. Replacement ratios that are utilized for calculating mitigation credits are consistent with the *Chehalis Basin Mitigation Bank, Hanaford Valley Site: Mitigation Banking Instrument* (WCEI Chehalis MB LLC, 2013), provided in Table 33 below.

Table 33.	Replacement Ratios for Determining Credits Needed to Compensate for Direct
Impacts	

Impacted Wetland Rating <sup>1</sup>	Recommended Mitigation Ratio <sup>2</sup> (Credits Needed per Acre of Impacted Wetland)	
Category I	Case-by-Case	
Category II	1.25:1	
Category III	1:1	
Category IV	0.85:1	
Critical Area Buffer	Case-by-Case	

1. Current WSDOE wetland rating system for Western Washington (Hruby, 2014).

2. Credit calculation methods are derived from the Credit Guide for Wetland Mitigation Banks (WSDOE and USACE, 2009). Credit calculation methods are derived from the CBMB MBI document. A ratio of 0.25:1 credit calculation for critical area buffer impacts results in a 1:1 ratio for permitted buffer impacts to buffer restoration at the bank.

# Chapter 8. Closure

The findings and conclusions documented in this report have been prepared for specific application to Puget Western Jackson Highway site. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this project may need to be revised wholly or in part.

The wetland boundary and ordinary high-water marks identified by Soundview Consultants LLC are based on conditions present at the time of the site inspection and considered preliminary until the flagged wetland boundary is validated by the jurisdictional agencies. Validation of the wetland boundary by the regulating agencies provides a certification, usually written, that the wetland boundary verified is the boundary that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulating agencies can provide this certification.

Since wetlands and waterbodies are dynamic communities affected by both natural and human activities, changes in wetland boundaries may be expected; therefore, wetland delineations cannot remain valid for an indefinite period of time. Local agencies typically recognize the validity of wetland delineations for a period of 5 years after completion of a wetland delineation and fish and wildlife habitat report. Development activities on a site 5 years after the completion of this wetland delineation report may require revision of the wetland delineation. In addition, changes in government codes, regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

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# Appendix A — Methods and Tools

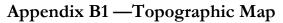
Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army. mil/elpubs/pdf/wlman87 .pdf	<b>Environmental Laboratory.</b> 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Western Mountains, Valleys, and Coast Region Regional Supplement	http://www.usace.army.m il/Portals/2/docs/civilwo rks/regulatory/reg_supp/ west_mt_finalsupp.pdf	U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR- 10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	http://www.fws.gov/wetl ands/Documents/Classifi cation-of-Wetlands-and- Deepwater-Habitats-of- the-United-States.pdf https://www.fgdc.gov/st andards/projects/wetland s/nvcs-2013	<ul> <li>Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Government Printing Office, Washington, D.C.</li> <li>Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.</li> </ul>
	Hydrogeomorphic Classification System	http://el.erdc.usace.army. mil/wetlands/pdfs/wrpde 4.pdf	<b>Brinson</b> , M. M. (1993). "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
Wetland Rating	Washington State Wetland Rating System	http://www.ecy.wa.gov/b iblio/0406025.html	<b>Hruby, T</b> . 2014. Washington State wetland rating system for western Washington –Revised. Publication # 04-06-029.
Wetland Indicator Status	2016 National Wetland Plant List	https://www.fws.gov/wet lands/documents/Nation al-Wetland-Plant-List- 2016-Wetland-Ratings.pdf	Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. <i>The National Wetland Plant List: 2016 wetland</i> <i>ratings.</i> Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
Stream Classification	Department of Natural Resources Water Typing System	Forest Practices Water Typing: http://www.stage.dnr.wa. gov/forestpractices/water typing/	Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.
Plant Names and	USDA Plant Database	http://plants.usda.gov/	Website
Identification	Flora of the Pacific Northwest	http://www.pnwherbar ia.org/florapnw.php	<b>Hitchcock</b> , C.L. & A. Cronquist, Ed. by D. Giblin, B. Ledger, P. Zika, and R. Olmstead. 2018. Flora of the Pacific Northwest, 2nd Edition. U.W. Press and Burke Museum. Seattle, Washington.
Soils Data	NRCS Soil Survey	http://websoilsurvey.nrcs .usda.gov/app/WebSoilSu rvey.aspx	Website GIS data based upon: <b>Evans, Robert L and Fibich, W. R.</b> 1987. Soil Survey of Lewis County, Washington. United States Department of Agriculture, Soil Conservation Service in cooperation with Washington State Department of Natural Resources, and Washington State University, Agriculture Research Center. Washington, D.C.
	Field Indicators of Hydric Soils in the United States, Version 8.2.	https://www.nrcs.usda. gov/Internet/FSE_D OCUMENTS/nrcs142 p2_053171.pdf	United States Department of Agriculture, Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA,

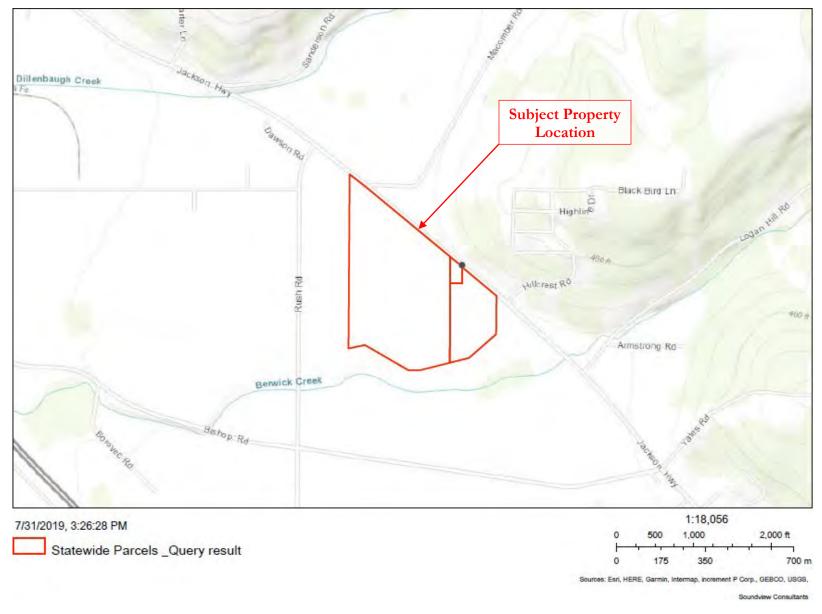
#### Table A-1. Methods and tools used to prepare the report.

Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/map ping/salmonscape/	NRCS, in cooperation with the National Technical Committee for Hydric Soils. Website
Report Preparation	Chehalis Municipal Code	https://www.codepublish ing.com/WA/Chehalis/# !/Chehalis17/Chehalis17	CMC Title 17. Division III. Environmental Districts.

# Appendix B — Background Information

This appendix includes a topographic map (B1); USFWS NWI map (B2); DNR stream typing map (B3); NRCS soil survey map (B4); WDFW PHS map (B5); WDFW SalmonScape map (B6); Lewis County stream and wetland inventory (B7); and FEMA flood hazard areas map (B8).

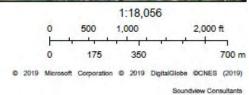




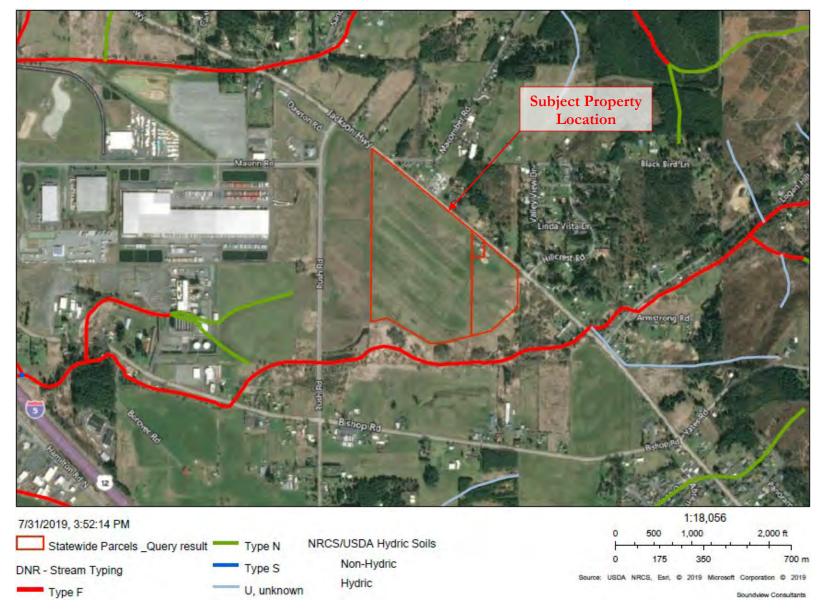
Appendix B2 — USFWS NWI Map



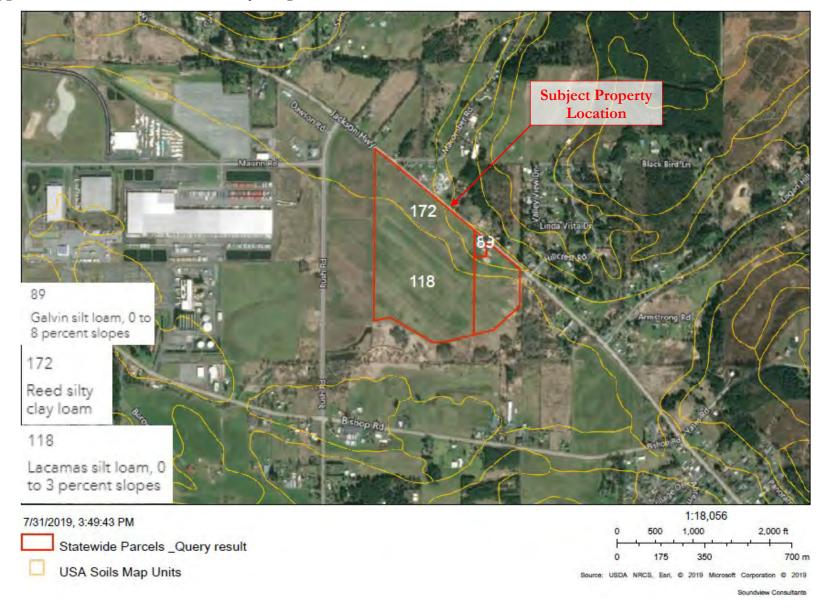
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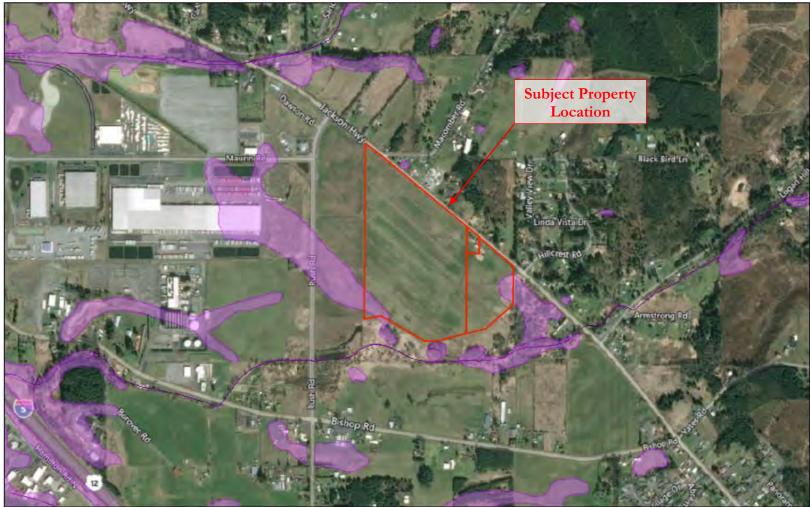
Appendix B3 — DNR Stream Typing Map



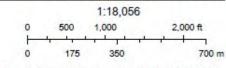
Appendix B4 — NRCS Soil Survey Map



# Appendix B5 — WDFW PHS Map

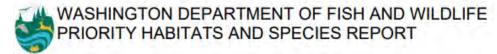


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WDFW, © 2019 Microsoft Corporation © 2019 DigitalGlobe ©CNES (2019)

Soundview Consultants

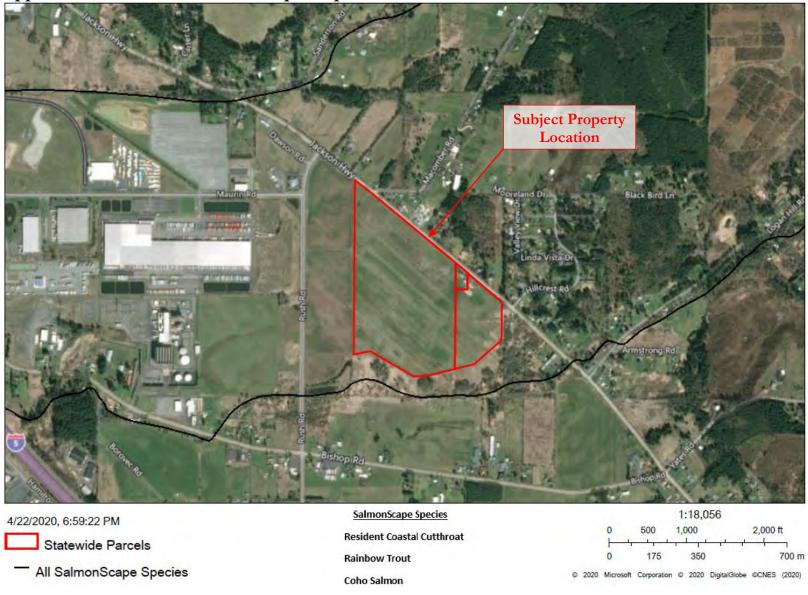


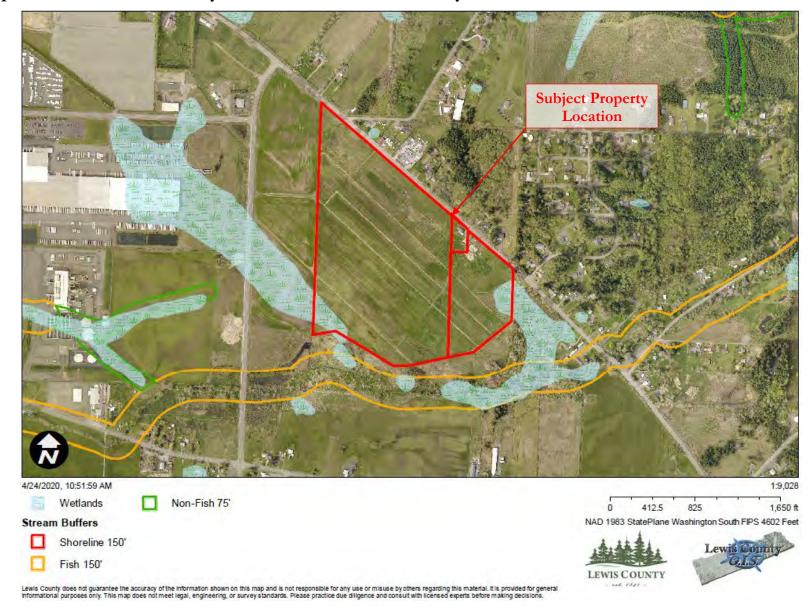
SOURCE DATASET: PHSPlusPublic REPORT DATE: 04/24/2020 11.56 Query ID: P200424115610

Common Name Scientific Name	Site Name Source Dataset Source Record	Priority Area Occurrence Type More Information (URL)	Accuracy	Federal Status State Status PHS Listing Status	Sensitive Data Resolution	Source Entity Geometry Type
Notes	Source Date	Mgmt Recommendations		The Liabilg Status		
Big brown bat		Breeding Area	GPS	N/A	Y	WA Dept. of Fish and Wildlif
Eptesicus fuscus	WS_OccurPoint 146577	Biotic detection		N/A	TOWNSHIP	Points
	June 27, 2018	http://wdfw.wa.gov/publicati	ions/pub.php?	PHS LISTED		
Coho	Berwick Creek	Breeding Area	NA	N/A	N	
Oncorhynchus kisutch	SWIFD 54565	Breeding area		N/A	AS MAPPED	Lines
	54505	http://wdfw.wa.gov/wlm/dive	ersty/soc/soc.ntm	PHS LISTED		
Coho	Berwick Creek	Occurrence	NA	Candidate	N	WDFW Fish Program
Oncorhynchus kisutch	SASI 3605	Occurrence	Contract and	N/A	AS MAPPED	Lines
	3605	http://wdfw.wa.gov/wlm/dive	ersty/soc/soc.htm	PHS Listed		
Cutthroat	Berwick Creek	Occurrence	NA	Candidate	Ň	WDFW Fish Program
Oncorhynchus clarki	SASI	Occurrence		N/A	AS MAPPED	Lines
	7580	http://wdfw.wa.gov/wlm/dive	ersty/soc/soc.htm	PHS Listed		
Freshwater Emergent	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIWetlands	Aquatic habitat		N/A	AS MAPPED	Polygons
		http://www.ecy.wa.		PHS Listed		
Freshwater Emergent	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIWetlands	Aquatic habitat		N/A	AS MAPPED	Polygons
		http://www.ecy.wa.		PHS Listed		
Freshwater Emergent	N/A	Aguatic Habitat	NA	N/A	Ň	US Fish and Wildlife Service
	NWIWetlands	Aquatic habitat		N/A	AS MAPPED	Polygons

Common Name Scientific Name Notes	Site Name Source Dataset Source Record Source Date	Priority Area Occurrence Type More Information (URL) Mgmt Recommendations	Accuracy	Federal Status State Status PHS Listing Status	Sensitive Data Resolution	Source Entity Geometry Type	
Freshwater Forested/Shrub		Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service	
	NWIWetlands	Aquatic habitat		N/A	AS MAPPED	Polygons	
		http://www.ecy.wa.		PHS Listed			
Freshwater Forested/Shrub	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service	
	NWIWetlands	Aquatic habitat		N/A	AS MAPPED	Polygons	
		http://www.ecy.wa.		PHS Listed			
Freshwater Forested/Shrub		Aquatic Habitat	NA	N/A	Ň	US Fish and Wildlife Service	
	NWIWetlands	Aquatic habitat		N/A	AS MAPPED	Polygons	
		http://www.ecy.wa.		PHS Listed			
Oak Woodland	LEWIS COUNTY OAK	Terrestrial Habitat	1/4 mile (Quarter	N/A	N	WA Dept. of Fish and Wildlife	
	PHSREGION 902189	N/A		N/A	AS MAPPED	Polygons	
	902189	http://wdfw.wa.gov/publications/pub.php?		PHS LISTED			
Rainbow Trout	Berwick Creek	Occurrence/Migration	NA	N/A	N		
Oncorhynchus mykiss	SWIFD	Occurrence/migration	ma arts arts date	N/A	AS MAPPED	Lines	
	54569	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm		PHS LISTED			
Resident Coastal Cutthroat	Berwick Creek	Occurrence/Migration	NA	N/A	Ň		
Oncorhynchus clarki	SWIFD	Occurrence/migration		N/A	AS MAPPED	Lines	
	54563	http://wdfw.wa.gov/wlm/dive	ersty/soc/soc.htm	PHS LISTED			

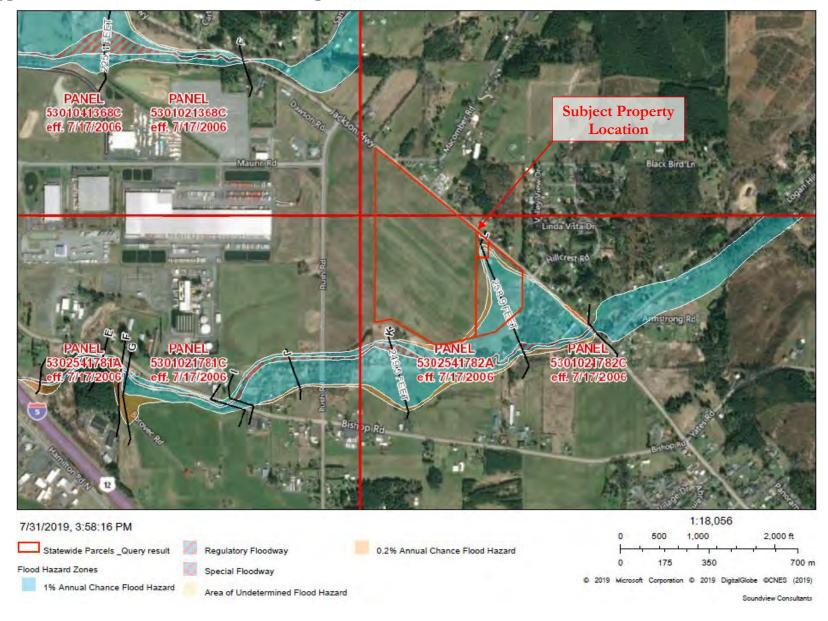
Appendix B6 — WDFW SalmonScape Map





# Appendix B7 — Lewis County Stream and Wetland Inventory

# Appendix B8 — FEMA Flood Hazard Map



# Appendix C — Existing Conditions and Proposed Exhibits

Appendix D — Data Forms

Project/Site: 1244.0001 Jackson Highway		0:1.10	Cheba	lie / Lowie	Sampling Date: 6/25/19
					Sampling Date: <u>0720, 19</u>
				ownship, Range: <u>11 / 1</u>	
Landform (hillslope, terrace, etc.): Valley Floor					
			-		
- · · · · ·					
Soil Map Unit Name: Reed silty clay loam				NWI classifi	
Are climatic / hydrologic conditions on the site typical for this	-		No 🗙 (	lf no, explain in Remarks	i.)
Are Vegetation, Soil, or Hydrology sigr	nificantly dist	turbed?	Are "N	ormal Circumstances" pr	resent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology natu	rally probler	natic?	(If need	ed, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transect	s, important features, etc
Hydrophytic Vegetation Present? Yes 🗵 No 🗌			<b>.</b> .		
Hydric Soil Present? Yes ⊠ No □			e Sampleo		
Wetland Hydrology Present? Yes 🗌 No 🗵		with	in a Wetla	nd? Yes 🗌	
Remarks: Not all three wetland criteria met; lacks wetla	nd hydrolog	m. Data a	llootod bo	twoon Wotlands A and I	<b>B</b> Draginitation was alightly
below average at 58 percent of normal.	na nyaroloş	gy. Data Co	Juccieu De	tween wenands A and I	5. Freephanon was signify
VEGETATION – Use scientific names of plan	ts.				
	Absolute	Dominant	Indicator	Dominance Test wor	ksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant	Species
1				That Are OBL, FACW	, or FAC: <u>2</u> (A)
2				Total Number of Domi	inant
3				Species Across All Str	rata: <u>3</u> (B)
4				Percent of Dominant S	
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C	over	That Are OBL, FACW	, or FAC: <u>67%</u> (A/B)
1/				Prevalence Index wo	orksheet:
2				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
	0	= Total C	over		x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> ) <u>1</u> Schedonorus arundinaceus	30	Yes	FAC	UPL species	
2 Anthoxanthum odoratum	30	Yes	FACU	Column Totals:	(A) (B)
3 Holcus lanatus	30	Yes	FAC	Prevalence Inde	ex = B/A =
4. Hypochaeris radicata	10	No	FACU	Hydrophytic Vegetat	
				Rapid Test for Hyd	
6				Dominance Test is	s >50%
7				Prevalence Index	is ≤3.0 <sup>1</sup>
8					aptations <sup>1</sup> (Provide supporting
9					ks or on a separate sheet)
10				Wetland Non-Vase	
11				-	ophytic Vegetation <sup>1</sup> (Explain)
	100	= Total C	over		oil and wetland hydrology must sturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )					
1				Hydrophytic	
2	0	= Total C	over	Vegetation Present? Y	es 🗵 No 🗌
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ouah dom	inance t	est.		
i i jai oprijao i ogotation ontona mot tin					

I Tollie Dest	cription: (Describ	e to the de	epth needed t	o document the	indicator	or confirm	the abs	sence of indicators.)	
Depth	Matrix			Redox Feature					
(inches)	Color (moist)	<u>%</u>	<u>Color (mois</u>		Type <sup>1</sup>	Loc <sup>2</sup>	Texture		
0 - 3	10YR 3/2	100	-		-	-	SiLo	Silt Loam	
3 - 16	10YR 3/2	93	5YR 3/4	5	С	PL,M	SiLo	Silt loam	
			5YR 4/6	2	С	PL,M			
	oncentration, D=De					ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matr	
Hydric Soil	Indicators: (Appl	icable to a	ll LRRs, unle	ss otherwise no	ted.)		In	dicators for Problematic Hydric Soil	s³:
Histosol	. ,		-	Redox (S5)			_	2 cm Muck (A10)	
	pipedon (A2)			d Matrix (S6)	<b>4</b> ) /		니	( )	
Black His				Mucky Mineral (F Gleyed Matrix (F2		MILRA 1)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)	
	n Sulfide (A4) Below Dark Surfa	ce (A11)		d Matrix (F3)	-)			Other (Explain in Remarks)	
	ark Surface (A12)	00 (/11)		Dark Surface (F6	)		<sup>3</sup> In	dicators of hydrophytic vegetation and	
	lucky Mineral (S1)			d Dark Surface (I				wetland hydrology must be present,	
	Bleyed Matrix (S4)		Redox	Depressions (F8)				unless disturbed or problematic.	
	Layer (if present):								
Туре: <u>NC</u>									
Depth (in	cnes):						Hydri	c Soil Present? Yes 🗵 No 🗌	
Remarks:									
Hydric soil	critoria mot thr								
	chilena met im	ough ind	icator F6.						
,	chiena met un	ough ind	icator F6.						
-		ough ind	icator F6.						
-		ough ind	icator F6.						
HYDROLO			icator F6.						
HYDROLO Wetland Hy	θGY	5:	red; check all					Secondary Indicators (2 or more requi	red)
HYDROLO Wetland Hy Primary India	GY drology Indicator cators (minimum of Water (A1)	5:	red; check all	hat apply) ater-Stained Leav	res (B9) ( <b>e</b>	xcept MLR		Secondary Indicators (2 or more requi	
HYDROLO Wetland Hy Primary India Surface	<b>IGY</b> drology Indicator <u>cators (minimum of</u> Water (A1) ater Table (A2)	5:	red; check all t	ater-Stained Leav 1, 2, 4A, and 4E		xcept MLR	A	Water-Stained Leaves (B9) (MLR/ 4A, and 4B)	
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio	<b>GY</b> drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3)	5:	r <u>ed; check all i</u> □ W □ Sa	ater-Stained Leav 1, 2, 4A, and 4E It Crust (B11)	3)	xcept MLR	A	<ul> <li>Water-Stained Leaves (B9) (MLR.</li> <li>4A, and 4B)</li> <li>□ Drainage Patterns (B10)</li> </ul>	
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M	drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1)	5:	red; check all f W Sa Acc	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate	<b>3)</b> es (B13)	xcept MLR	A	<ul> <li>Water-Stained Leaves (B9) (MLR/ 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> </ul>	A 1, 2,
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer	GY drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2)	5:	r <u>ed; check all f</u> W Sa Ac Hy	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O	<b>3)</b> es (B13) dor (C1)		A	<ul> <li>Water-Stained Leaves (B9) (MLR/ 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Image</li> </ul>	A 1, 2,
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep	<b>GY</b> drology Indicator <u>cators (minimum of</u> Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3)	5:	r <u>ed; check all t</u> □ W □ Sa □ Ac □ Hy □ O	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O idized Rhizosphe	<b>3)</b> es (B13) dor (C1) eres along	Living Root	A	<ul> <li>Water-Stained Leaves (B9) (MLR/ 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Image</li> <li>Geomorphic Position (D2)</li> </ul>	A 1, 2,
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4)	5:	red; check all 1 W Sa Act Hy O Pr	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O idized Rhizosphe esence of Reduce	<b>3)</b> dor (C1) eres along ed Iron (C4	Living Root	ta ts (C3)	<ul> <li>Water-Stained Leaves (B9) (MLR/ 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Image</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> </ul>	A 1, 2,
HYDROLO Wetland Hy Primary India Surface ' High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	5:	r <u>ed; check all f</u> W Sa Ac Hy O Pr Re	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O idized Rhizosphe esence of Reduce cent Iron Reduct	<b>B)</b> dor (C1) eres along ed Iron (C4 ion in Tiller	Living Root }) d Soils (C6)	<b>A</b> ts (C3)	<ul> <li>Water-Stained Leaves (B9) (MLR/4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Image</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> </ul>	A 1, 2,
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HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundatic	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca	s: ione requir	red; check all f W W Sa Ac Ac Hy O O O Pr Re St 37) Ot	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O didized Rhizosphe esence of Reduce cent Iron Reduct unted or Stressed	8) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Root ) d Soils (C6)	<b>A</b> ts (C3)	<ul> <li>Water-Stained Leaves (B9) (MLR/4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Image</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>	A 1, 2,
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HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca vations: ter Present? Present? pillary fringe)	s: ione requir imagery (I ve Surface Yes I Yes I Yes I Yes I	red; check all f         W         Sa         Ac         Hy         O         Hy         O         No         Xo         Depti         No         Xo         Depti	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O idized Rhizosphe esence of Reduce ecent Iron Reduct unted or Stressec her (Explain in Re- n (inches): <u>None</u> n (inches): <u>None</u> n (inches): <u>None</u>	B) dor (C1) eres along ed Iron (C4 ion in Tilled Plants (D emarks)	Living Root I) d Soils (C6) 1) (LRR A)	A (C3) ) and Hyd	Water-Stained Leaves (B9) (MLRJ         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Image         Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)	A 1, 2,
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	drology Indicator cators (minimum of Water (A1) hter Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria / Vegetated Conca vegetated Conca vegetated Conca vegetated Conca vegetated Conca vegetated Conca vegetated Conca vegetated Conca vegetated Conca	s: ione requir imagery (I ve Surface Yes I Yes I Yes I Yes I	red; check all f         W         Sa         Ac         Hy         O         Hy         O         No         Xo         Depti         No         Xo         Depti	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O idized Rhizosphe esence of Reduce ecent Iron Reduct unted or Stressec her (Explain in Re- n (inches): <u>None</u> n (inches): <u>None</u> n (inches): <u>None</u>	B) dor (C1) eres along ed Iron (C4 ion in Tilled Plants (D emarks)	Living Root I) d Soils (C6) 1) (LRR A)	A (C3) ) and Hyd	Water-Stained Leaves (B9) (MLRJ         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Image         Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)	A 1, 2,
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca	drology Indicator cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca vations: ter Present? Present? pillary fringe)	s: ione requir imagery (I ve Surface Yes I Yes I Yes I Yes I	red; check all f         W         Sa         Ac         Hy         O         Hy         O         No         Xo         Depti         No         Xo         Depti	ater-Stained Leav <b>1, 2, 4A, and 4E</b> It Crust (B11) uatic Invertebrate drogen Sulfide O idized Rhizosphe esence of Reduce ecent Iron Reduct unted or Stressec her (Explain in Re- n (inches): <u>None</u> n (inches): <u>None</u> n (inches): <u>None</u>	B) dor (C1) eres along ed Iron (C4 ion in Tilled Plants (D emarks)	Living Root I) d Soils (C6) 1) (LRR A)	A (C3) ) and Hyd	Water-Stained Leaves (B9) (MLRJ         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Image         Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)	A 1, 2,

No wetland hydrology criteria met.

Project/Site: 1244.0001 Jackson Highway City/Co	<sub>bunty:</sub> <u>Chehalis / Lewis</u>	Sampling Date: <u>6/25/19</u>
Applicant/Owner: Puget Western, Inc.	State: WA	Sampling Point: DP- 102
Investigator(s): Kyla Caddey, Ryan Krapp	Section, Township, Range: <u>11</u>	/ 13N / 02W
Landform (hillslope, terrace, etc.): Valley Floor Local		ncave Slope (%): <u>3</u>
Subregion (LRR): <u>A2</u> Lat: <u>46.6239</u>	16Long: -122.900	60146 Datum: WGS 84
Soil Map Unit Name: Galvin silt Ioam, 0 to 8 percent slopes	NWI clas	ssification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes		
Are Vegetation, Soil, or Hydrology significantly disturbed'	? Are "Normal Circumstances	s" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answ	vers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing same	oling point locations, transe	ects, important features, etc.
Hydrophytic Vegetation Present? Yes 🗵 No 🗌	la tha Oannala d Ana a	
Hydric Soil Present? Yes X No	Is the Sampled Area	
Wetland Hydrology Present? Yes 🗵 No 🗌	within a Wetland? Yes	🗙 No 🗌

Remarks: All three wetland criteria met. Data collected in Wetland B. Precipitation is slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: 100% (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				
1				Prevalence Index worksheet:
2		·		Total % Cover of: Multiply by:
3		·		OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Schedonorous arundinaceus	30	Yes	FAC	Column Totals: (A) (B)
2. Juncus effusus	25	Yes	FACW	
3. Ranunculus repens	10	No	FAC	Prevalence Index = B/A =
4. Hypochaeris radicata	10	No	FACU	Hydrophytic Vegetation Indicators:
5. Alopecurus pratensis	5	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Agrostis capillaris	5	No	FAC	➤ Dominance Test is >50%
7. Anthoxanthum odoratum	5	No	FACU	□ Prevalence Index is ≤3.0 <sup>1</sup>
8				<ul> <li>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
9				☐ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	90			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	90	= Total C	over	be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
% Bare Ground in Herb Stratum 10	0	= Total C	over	Present? Yes 🗵 No 🗌
Bomorko:				
Hydrophytic vegetation criteria met thr	ough the	dominan	ce test.	

# SOIL

Profile Desc	ription: (Describe	to the d	epth n	eeded to docum	nent the ir	ndicator	or confirm	n the ab	sence	of indicators.)
Depth	Matrix			Redox	<pre>&lt; Features</pre>					
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
0 - 13	10YR 3/2	93	7.5	5YR 3/4	7	С	PL,M	SiLo		Silt Loam
13 - 16	10YR 3/2	90	7.5	5YR 3/4	5	С	PL,M	SiLo		Silt loam
			10	YR 4/6	5	С	М			
					· <u> </u>					
	oncentration, D=De						ed Sand G			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applie	cable to	all LRR	s, unless other	wise note	ed.)		In	ndicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (S	5)				] 2 cm	n Muck (A10)
Histic Ep	ipedon (A2)			Stripped Matrix (	,					Parent Material (TF2)
Black His	stic (A3)			Loamy Mucky M		) (except	MLRA 1)		-	Shallow Dark Surface (TF12)
_ , 0	n Sulfide (A4)			Loamy Gleyed N					] Othe	er (Explain in Remarks)
Depleted	Below Dark Surfac	e (A11)		Depleted Matrix	(F3)					
Thick Da	rk Surface (A12)		×	Redox Dark Surf	face (F6)			3	ndicato	ors of hydrophytic vegetation and
🔲 Sandy M	ucky Mineral (S1)			Depleted Dark S	urface (F7	<b>'</b> )			wetla	nd hydrology must be present,
🔲 Sandy G	leyed Matrix (S4)			Redox Depression	ons (F8)				unles	s disturbed or problematic.
	_ayer (if present):									
Type: NO	ne			_						
Depth (ind	ches):			-				Hydr	ic Soil	Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met thro	uah ind	dicato	r F6						
riyano son	ontona met ane	agiriik	liouto	10.						
HYDROLO	GY									
Wetland Hy	drology Indicators	:								
Primary Indic	ators (minimum of	one requ	ired; ch	eck all that apply	()				Secor	ndary Indicators (2 or more required)
Surface V	Nater (A1)			🗌 Water-Stair	ned Leave	s (B9) ( <b>e</b> :	cept ML	RA	ωw	ater-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ter Table (A2)				, and 4B)		•			4A, and 4B)
☐ Saturatio				Salt Crust (					□ Dr	rainage Patterns (B10)
Water Ma	( )			Aquatic Inve	,	(B13)				ry-Season Water Table (C2)
	t Deposits (B2)			Hydrogen S		. ,				aturation Visible on Aerial Imagery (C9)
							Living Doc	ata (C2)		
	osits (B3)			Oxidized Ri		-	-	$\operatorname{Dis}(\operatorname{CS})$		eomorphic Position (D2)
	t or Crust (B4)			Presence o		•	,			nallow Aquitard (D3)
	osits (B5)			Recent Iron				,		AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or		•	1) ( <b>LRR A</b>	.)		aised Ant Mounds (D6) ( <b>LRR A</b> )
Inundation	on Visible on Aerial	Imagery	(B7)	Other (Expl	ain in Ren	narks)			🗌 Fr	ost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surface	e (B8)							
Field Obser	vations:									
Surface Wate	er Present?	Yes 🗌	No 🗙	Depth (inches)	<sub>):</sub> None					
Water Table	Present?	Yes 🗌	No 🗙	Depth (inches)	): None					
Saturation P	resent?	Yes 🗌	No 🗵	Depth (inches	): None		Wet	land Hyd	drology	y Present? Yes 🗵 No 🗌
(includes cap		0.001/00	monito					-		
Describe Ke	corded Data (strean	n yauye,		nng wen, aenal p	notos, pre	vious ins	pections)	, ii availa	IDIE.	
Remarks:										
	/drology criteria	mot th	rouah	secondary in	dicatore	D2 and				
	anoiouv unitella	ությունե	ougit	Secondary III	uivaluis		и DJ.			

Project/Site: 1244.0001 Jackson Highway City/	County: Chehalis/ Lewis Sampling Date: 6/25/19
Applicant/Owner: Puget Western, Inc.	State: WA Sampling Point: DP-103
Investigator(s): Kyla Caddey, Ryan Krapp	Section, Township, Range: <u>11 / 13N / 02W</u>
Landform (hillslope, terrace, etc.): Valley Floor Loc	al relief (concave, convex, none): <u>Concave</u> Slope (%): <u>2</u>
Subregion (LRR): <u>A2</u> Lat: <u>46.62</u> 4	Long: -122.90194575 Datum: WGS-84
Soil Map Unit Name: Reed silty clay loam	NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year?	
Are Vegetation, Soil, or Hydrology significantly disturbe	ed? 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 san	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present?       Yes X       No I         Hydric Soil Present?       Yes X       No I         Wetland Hydrology Present?       Yes X       No I         Remarks:       Yes X       No I	Is the Sampled Area within a Wetland? Yes ⊠ No □

Remarks: All three wetland criteria met. Data collected in Wetland C. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Demonst of Deminant Creation
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Ranunculus repens	40	Yes	FAC	Column Totals: (A) (B)
2. Schedonorous arundinaceus	30	Yes	FAC	
3. Agrostis capillaris	10	No	FAC	Prevalence Index = B/A =
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Phalaris arundinacea	5	No	FACW	Rapid Test for Hydrophytic Vegetation
6		·		☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	05	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	95	= Total C	over	be present, unless disturbed or problematic.
1		·		Hydrophytic
2				Vegetation
_	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>5</u>				
Remarks: Hydrophytic vegetation criteria met thro	ough the	Dominan	ce Test.	

#### SOIL

Profile Dese	cription: (Describe	to the dept	h needed to docu	ument the	indicator	or confirm	the abse	ence of indicators.)
Depth (inches)	Matrix	%		lox Feature		_Loc <sup>2</sup>	Taxtura	Domotico
<u>(inches)</u> 0 - 3	<u>Color (moist)</u> 10YR 3/2	100	<u>Color (moist)</u>	%	Type <sup>1</sup>		<u>Texture</u> SiLo	<u>Remarks</u> Silt Loam
3 - 7	10YR 3/1	· ·	- 5YR 4/6	7		- PL,M	SiLo	Silt loam
		· ·						
7 - 16	10YR 3/1	88	5YR 4/6	12	С	PL,M	SiLo	Silt loam
		· ·						
		· ·						
		· ·						
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM=	Reduced Matrix, C	S=Covere	ed or Coat	ed Sand Gr	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Applic							icators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (	(S5)				2 cm Muck (A10)
	pipedon (A2)		Stripped Matrix	k (S6)				Red Parent Material (TF2)
🔲 Black Hi			Loamy Mucky			t MLRA 1)		Very Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed	•	2)			Other (Explain in Remarks)
	Below Dark Surface		Depleted Matri				2.	
	ark Surface (A12)		Redox Dark Su	• • •				licators of hydrophytic vegetation and
-	lucky Mineral (S1)		Depleted Dark	•	-7)			wetland hydrology must be present,
	ileyed Matrix (S4) Layer (if present):		Redox Depres	sions (F8)			T	unless disturbed or problematic.
Type: No								
Depth (in							Hydric	Soil Present? Yes 🗵 No 🗌
Remarks:							-	
Hydric soil	criteria met thro	uah indic:	ator F6					
riyano oon		agirmaio						
HYDROLO								
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of c	one required	; check all that app	oly)			8	Secondary Indicators (2 or more required)
Surface	( )		Water-Sta	ained Leav	ves (B9) ( <b>e</b>	xcept MLR	A [	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)		1, 2, 4	IA, and 4E	3)			4A, and 4B)
Saturatio	on (A3)		Salt Crus	t (B11)			C	Drainage Patterns (B10)
🗌 Water M	arks (B1)		Aquatic Ir	nvertebrate	es (B13)		Ľ	Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)		Hydrogen	n Sulfide O	dor (C1)		Γ	Saturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Rhizosphe	eres along	Living Root	ts (C3)	Geomorphic Position (D2)
Algal Ma	it or Crust (B4)		Presence	of Reduce	ed Iron (C	4)	Γ	Shallow Aquitard (D3)
Iron Dep	osits (B5)		Recent Ire	on Reduct	ion in Tille	d Soils (C6)	) [	FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted o	or Stressed	l Plants (D	1) ( <b>LRR A</b> )	C	Raised Ant Mounds (D6) (LRR A)
🗌 Inundatio	on Visible on Aerial I	magery (B7)	) 🛛 🗌 Other (Ex	plain in Re	emarks)		Γ	] Frost-Heave Hummocks (D7)
Sparsely	Vegetated Concave	Surface (B	8)					

Sparsely Vegetated Conc	ave Surfac	æ (B8)			
Field Observations:					
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None		
Water Table Present?	Yes 🗌	No 🗵	Depth (inches): None		
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🗙	Depth (inches): <u>None</u>	Wetland Hydrology Present? Yes 🗵 No 🗌	
Describe Recorded Data (stre	eam gauge	, monitori	ng well, aerial photos, previous inspec	tions), if available:	
Remarks:					

Wetland hydrology criteria met through secondary indicators D2 and D5. Surface hydrology observed periodically during the course of well monitoring events onsite, however duration of surface water and/or presence of groundwater was never confirmed.

Project/Site: 1244.0001 Jackson Highway City/C	<sub>County:</sub> Chehalis / Lewis	Sampling Date: <u>6/25/19</u>
Applicant/Owner: Puget Western, Inc.	State: W	A Sampling Point: DP-104
Investigator(s): Kyla Caddey, Ryan Krapp	Section, Township, Range	e: <u>11 / 13N / 02W</u>
Landform (hillslope, terrace, etc.): Valley Floor		): <u>Concave</u> Slope (%): <u>5</u>
		2.90190111 Datum: WGS-84
Soil Map Unit Name: <u>Reed silty clay loam</u>	NV	NI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Y		
Are Vegetation, Soil, or Hydrology significantly disturbe	d? Are "Normal Circumst	tances" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic	? (If needed, explain any	y answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, tr	ransects, important features, etc.
Hydrophytic Vegetation Present?       Yes I       No I         Hydric Soil Present?       Yes I       No I         Wetland Hydrology Present?       Yes I       No I	Is the Sampled Area within a Wetland?	Yes 🗌 No 🗵
Remarks: Not all three wetland criteria met: only hydric soil present. Up	land plot for Wetland C. Preci	nitation was slightly below average at 58

Not all three wetland criteria met; only hydric soil present. Upland plot for Wetland C. Precipitation was slightly below average at 58 percent of normal.

	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C	over	That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species         x1 =
3				
4		·		FACW species x 2 =
5	0			FAC species x 3 =
Herb Stratum (Plot size: <u>10 ft</u> )	0	= Total C	over	FACU species x 4 =
1. Schedonorous arundinaceus	30	Yes	FAC	UPL species x 5 =
2. Anthoxanthum odoratum	25	Yes	FACU	Column Totals: (A) (B)
3. Hypochaeris radicata	20	Yes	FACU	Prevalence Index = B/A =
4. Jacobaea vulgaris	15	No	FACU	Hydrophytic Vegetation Indicators:
5. Agrostis capillaris	8	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Holcus lanatus	2	No	FAC	Dominance Test is >50%
				Prevalence Index is $\leq 3.0^{1}$
7				Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				U Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.
/				
1		·		Hydrophytic
2	0	= Total C	over	Vegetation Present? Yes No 🗵
% Bare Ground in Herb Stratum 0	<u> </u>		ovei	
Remarks:	Drovolor	oo indov	not worr	antad due to leak of combined bydrie seil and
	rievaler	ice muex	not warr	anted due to lack of combined hydric soil and
hydrology.				

#### SOIL

Depth	Cription: (Describe Matrix	to the de	-	lox Featur		r or contirn	n the abs	sence of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u>00x reatur</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e Remarks
0 - 2	10YR 3/2	100	-	-	-	-	SiLo	Silt Loam
2 - 6	10YR 3/2	93	5YR 4/6	7	С	PL,M	SiLo	Silt loam
6 - 16	10YR 3/2	88	5YR 4/6	12	С	PL,M	SiLo	Silt loam
			0			<u> </u>		
17								21
	Concentration, D=Dep Indicators: (Applic					ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox		///////			2 cm Muck (A10)
	pipedon (A2)		Stripped Matri					
	istic (A3)		Loamy Mucky	• •	- 1) ( <b>excep</b>	t MLRA 1)		• · · · · · · · · · · · · · · · · · · ·
	en Sulfide (A4)		Loamy Gleyed			,		
Deplete	d Below Dark Surfac	e (A11)	Depleted Matr	ix (F3)				
	ark Surface (A12)		🗙 Redox Dark S	•	,		<sup>3</sup> lr	ndicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)							wetland hydrology must be present,	
	Sandy Gleyed Matrix (S4)     Redox Depressions (F8)     unless disturbed or problematic.						unless disturbed or problematic.	
Type: No	Layer (if present):							
	nches):							
	lenes)						Hydri	ic Soil Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	l criteria met thro	ough ind	icator F6.					
HYDROLC	OGY							
	drology Indicators:	:						
-	icators (minimum of o		ed: check all that ap	(vla				Secondary Indicators (2 or more required)
Surface		•	☐ Water-St		ves (B9) ( <b>e</b>	except MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)			4A, and 4I		xcopt in Ei		4A, and 4B)
Saturati	. ,		Salt Crus		_,			Drainage Patterns (B10)
	larks (B1)			nvertebrate	es (B13)			Dry-Season Water Table (C2)
	nt Deposits (B2)		— •	n Sulfide C	· · /			Saturation Visible on Aerial Imagery (C9)
	posits (B3)				. ,	Living Roo	ts (C3)	Geomorphic Position (D2)
-	at or Crust (B4)			of Reduc	-	-	× - /	Shallow Aquitard (D3)
	posits (B5)				•	d Soils (C6	i)	☐ FAC-Neutral Test (D5)
	Soil Cracks (B6)					01) ( <b>LRR A</b> )	,	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial I	magery (E		kplain in R				Frost-Heave Hummocks (D7)
	y Vegetated Concave							
Field Obser			•					
Surface Wa	ter Present?	∕es 🔲 🛚 N	No 🗵 Depth (inch	<sub>es):</sub> <u>Non</u> e	e			

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

Yes 🗌 No 🛛

Yes 🗌 No 🗵

Depth (inches): None

Depth (inches): None

Remarks:

No wetland hydrology criteria met.

Water Table Present?

Saturation Present?

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: <u>1244.0001 Jackson Highway</u>	_City/County: Cheha	alis / Lewis	Sampling Date: 6/25/19
Applicant/Owner: Puget Western, Inc.		State: WA	Sampling Point: DP-105
Investigator(s): Kyla Caddey, Ryan Krapp	Section, 1	Township, Range: <u>11 /</u>	13N / 02W
Landform (hillslope, terrace, etc.): Valley Floor			Cave Slope (%): 1
			1814 Datum: WGS-84
Soil Map Unit Name: <u>Reed silty clay loam</u>		NWI classif	fication: N/A
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 🗌 No 🗙	(If no, explain in Remark	
Are Vegetation, Soil, or Hydrology significantly dis	sturbed? Are "N	Normal Circumstances" p	oresent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally proble	ematic? (If nee	ded, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point	locations, transec	ts, important features, etc.
Hydrophytic Vegetation Present?       Yes X       No I         Hydric Soil Present?       Yes X       No I         Wetland Hydrology Present?       Yes I       No X	Is the Sample within a Wetla	_	No 🗵
Remarks: Not all three wetland criteria met; lacks wetland hydrolo average at 58 percent of normal.	ogy. Upland plot betv	veen Wetlands D and E	. Precipitation was slightly below

-	Abcoluto	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)		Species?			
<u> </u>				Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)
		·			(,,)
2				Total Number of Dominant	
3		·		Species Across All Strata: <u>2</u>	(B)
4		·	·	Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	Cover	That Are OBL, FACW, or FAC: 100%	(A/B)
				Prevalence Index worksheet:	
1					
2				Total % Cover of: Multiply by:	
3		·		OBL species x 1 =	
4				FACW species x 2 =	
5		·		FAC species x 3 =	
	0	= Total C	Cover	FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )	4.5			UPL species x 5 =	
1. Holcus lanatus	45	Yes	FAC	Column Totals: (A)	(B)
2. Alopecurus pratensis	30	Yes	FAC		
3. Hypochaeris radicata	10	No	FACU	Prevalence Index = B/A =	
4. Anthoxanthum odoratum	5	No	FACU	Hydrophytic Vegetation Indicators:	
5. Ranunculus repens	5	No	FAC	Rapid Test for Hydrophytic Vegetation	
6. Poa pratensis	3	No	FAC	☑ Dominance Test is >50%	
7 Lolium perenne	2	No	FAC	□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide suppo	orting
				data in Remarks or on a separate shee	
9				Wetland Non-Vascular Plants <sup>1</sup>	
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Expla	ain)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology	must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	Cover	be present, unless disturbed or problematic.	
1		·	·	Hydrophytic	
2	0			Vegetation	
% Bare Ground in Herb Stratum $0$	0	= Total C	Cover	Present? Yes 🗵 No 🗌	
Remarks:					
Hydrophytic vegetation criteria r	net thro	ugh dor	ninance	e test.	
· · · –					

#### SOIL

Profile Desc	cription: (Describ	e to the de	epth nee	eded to docu	ment the	indicator	or confirm	n the al	osence	e of indicators.)
Depth	Matrix				ox Feature					
(inches)	Color (moist)	<u>%</u>		(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Textu</u>		<u> </u>
0 - 4	10YR 3/2	100	-		-			SiLo		Silt Loam
4 - 16	10YR 3/2	95	10Y	'R 4/6	5	С	PL,M	SiLo		Silt loam
<sup>1</sup> Type: C=C	oncentration, D=D	epletion, RI	M=Redu	iced Matrix, C	S=Covere	d or Coat	ed Sand G	rains.	<sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	licable to a	II LRRs	, unless othe	rwise not	ed.)		l	ndicat	ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		🗆 s	andy Redox (\$	S5)			[	] 2 cr	n Muck (A10)
	oipedon (A2)			tripped Matrix	· · ·			-		l Parent Material (TF2)
Black Hi				oamy Mucky N			t MLRA 1)	_		y Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed	-	)			] Oth	er (Explain in Remarks)
-	Below Dark Surfa	ace (A11)		epleted Matrix	. ,			3		
	Dark Surface (A12) I Redox Dark Surface (F6)					5		ors of hydrophytic vegetation and		
-	Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)							and hydrology must be present, ss disturbed or problematic.		
	Layer (if present)			euux Depiess					une	ss disturbed of problematic.
Type: No		•								
Depth (in								Hyd	ric Soi	l Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met thr	ough ind	icator	F6.						
,		0								
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	cators (minimum o	f one requir	ed; che	ck all that app	ly)				Seco	ndary Indicators (2 or more required)
Surface				U Water-Sta		es (B9) ( <b>e</b>	except MLI	RA		Vater-Stained Leaves (B9) (MLRA 1, 2,
	iter Table (A2)				A, and 4B					4A, and 4B)
Saturatio	. ,			Salt Crust		,				Prainage Patterns (B10)
	arks (B1)			Aquatic In		s (B13)				Dry-Season Water Table (C2)
	nt Deposits (B2)			Hydrogen		. ,				aturation Visible on Aerial Imagery (C9)
	oosits (B3)			Oxidized F		• •	Livina Roc	ots (C3)		Geomorphic Position (D2)
	at or Crust (B4)			Presence	•	-	-	()		hallow Aquitard (D3)
	osits (B5)			Recent Iro				3)		AC-Neutral Test (D5)
-	Soil Cracks (B6)			Stunted or			``	'		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria	l Imagery (I		Other (Exp			.)(	,		rost-Heave Hummocks (D7)
_	Vegetated Conca	0,0	,			/			-	( ),
Field Obser	0		· -/							
Surface Wat		Yes 🗌 🕴	No 🗙	Depth (inche	<sub>s):</sub> None	•				
Water Table			No 🗵	Depth (inche						

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

Yes 🗌 No 🗵

Depth (inches): None

Remarks:

Saturation Present?

No wetland hydrology criteria met.

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: 1244.0001 Jackson Highway City/C	<sub>ounty:</sub> Chehalis / Lewis	S Samp	oling Date: <u>6/25/19</u>
Applicant/Owner: Puget Western, Inc.	State:	WA Samp	oling Point: DP-106
Investigator(s): Kyla Caddey, Ryan Krapp	Section, Township, Ra	ange: <u>11 / 13N / 0</u> 2	2W
Landform (hillslope, terrace, etc.): Valley Floor Loca	I relief (concave, convex, no	_	
Subregion (LRR): <u>A2</u> Lat: <u>46.6248</u>	57 Long: -	122.90193538	Datum: WGS-84
Soil Map Unit Name: <u>Reed silty clay loam</u>		NWI classification:	N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Ye			
Are Vegetation, Soil, or Hydrology significantly disturbed	I? Are "Normal Circu	mstances" present?	Yes 🗶 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain	any answers in Rema	arks.)
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations	, transects, impo	ortant features, etc.
Hydrophytic Vegetation Present? Yes 🗵 No 🗌			
Hydric Soil Present? Yes 🗵 No 🗌	Is the Sampled Area		
Wetland Hydrology Present? Yes 🗌 No 🗵	within a Wetland?	Yes 🗌 No 🗷	
Remarks:	land plat for Watland V. I	Proginitation was alig	hthe halows avanage at 59

Not all three wetland criteria met; lacks wetland hydrology. Upland plot for Wetland Y. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Agrostis capillaris	30	Yes	FAC	Column Totals: (A) (B)
2. Alopecurus pratensis	30	Yes	FAC	
3. Anthoxanthum odoratum	20	Yes	FACU	Prevalence Index = B/A =
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Hypochaeris radicata	5	No	FACU	Rapid Test for Hydrophytic Vegetation
6 Rumex crispus	5	No	FAC	☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
				data in Remarks or on a separate sheet)
9			·	Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.
1				Hudronbutio
2				Hydrophytic Vegetation
_	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est.	

#### SOIL

Profile Desc	cription: (Describ	e to the de	pth nee	ded to docu	nent the i	indicator	or confirm	n the al	osence	e of indicators.)
Depth	Matrix		- <u></u>		x Feature					<b>_</b> .
(inches)	Color (moist)	<u>%</u>	_	(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
0 - 5	10YR 3/2	100	-		-			SiLo		Silt Loam
5 - 16	10YR 3/2	95	5YR	4/6	5	С	PL,M	SiLo		Silt loam
										·
	oncentration, D=De						ed Sand G			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	ll LRRs,	unless othe	rwise not	ed.)		li	ndicat	ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	. ,			andy Redox (S				[		n Muck (A10)
	pipedon (A2)			ripped Matrix	· /			-		Parent Material (TF2)
Black Hi				amy Mucky N			t MLRA 1)	_		y Shallow Dark Surface (TF12)
	n Sulfide (A4) d Below Dark Surfa	co (A11)		amy Gleyed I pleted Matrix		)		L	] Oth	er (Explain in Remarks)
-		ce (ATT)						3	Indicat	ors of hydrophytic vegetation and
	Thick Dark Surface (A12)     Image: Redox Dark Surface (F6)       Sandy Mucky Mineral (S1)     Image: Depleted Dark Surface (F7)				,		and hydrology must be present,			
□ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8)							ss disturbed or problematic.			
Restrictive	Layer (if present):				. ,					·
Type: No	one									
Depth (in	ches):							Hydi	ric Soi	l Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met thr	ough ind	icator F	-6.						
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	cators (minimum of	one requir	ed; chec	k all that appl	y)				Seco	ondary Indicators (2 or more required)
Surface	Water (A1)		E	] Water-Stai	ned Leave	es (B9) ( <b>e</b>	xcept MLF	RA	Ο V	Vater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	iter Table (A2)			1, 2, 4/	A, and 4B	)				4A, and 4B)
Saturation	on (A3)		E	] Salt Crust	(B11)					0rainage Patterns (B10)
🗌 Water M	arks (B1)		Ľ	Aquatic Inv	/ertebrate	s (B13)				Pry-Season Water Table (C2)
Sedimer	nt Deposits (B2)		E	Hydrogen	Sulfide Od	dor (C1)			🗆 s	Saturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		E	] Oxidized F	hizosphe	res along	Living Roo	ots (C3)		Geomorphic Position (D2)
🗌 Algal Ma	at or Crust (B4)		Ľ	Presence	of Reduce	d Iron (C4	4)		🗆 s	Shallow Aquitard (D3)
Iron Dep	osits (B5)		E	Recent Iro	n Reductio	on in Tille	d Soils (C6	5)	F	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Ľ	Stunted or	Stressed	Plants (D	1) ( <b>LRR A</b>	)	🗆 F	Raised Ant Mounds (D6) ( <b>LRR A</b> )
🗌 Inundatio	on Visible on Aeria	Imagery (E	37) [	Other (Exp	lain in Re	marks)			🗆 F	rost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ve Surface	(B8)							
Field Obser	vations:									
Surface Wat	er Present?	Yes 🗌 🕴	No 🗙	Depth (inches	<sub>s):</sub> None	<u> </u>				
Water Table	Present?	Yes 🗌 🛛 🛛		Depth (inches						

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

Yes 🗌 No 🗵

Depth (inches): None

Remarks:

Saturation Present?

No wetland hydrology criteria met.

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: 1244.0001 Jackson Highway	City/Cour	<sub>ity:</sub> Chehalis / Lewis	Sampling Date: 6/25/1	9			
Applicant/Owner: Puget Western, Inc.		State: <u>N</u>	A Sampling Point: DP-10	)7			
Investigator(s): Kyla Caddey, Ryan Krapp		_ Section, Township, Rang	<sub>le:</sub> <u>11 / 13N / 02W</u>				
Landform (hillslope, terrace, etc.): Valley Floor			e): <u>Convex</u> Slope (%):	1			
Subregion (LRR): <u>A2</u>	Lat: 46.626157	Long: -12	2.90377135 Datum: WG	S-84			
Soil Map Unit Name: <u>Reed silty clay loam</u>		N	WI classification: N/A				
Are climatic / hydrologic conditions on the site typical							
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 sampli	ng point locations, t	ransects, important features	, etc.			
Hydrophytic Vegetation Present?       Yes □         Hydric Soil Present?       Yes ⊠         Wetland Hydrology Present?       Yes □	No 🗌 wit	the Sampled Area hin a Wetland?	Yes 🗌 No 🗵				
Remarks: Not all three wetland criteria met; only average at 58 percent of normal.	hydric soils present. Uplar	nd plot between Wetlands	F and G. Precipitation was slightly	below			
VEGETATION – Use scientific names of	f plants.						
Tree Stratum (Plot size: 30 ft)	Absolute Dominal		Test worksheet:				

<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1		<u>Species</u>	? <u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2 3				Total Number of Dominant Species Across All Strata: 2 (B)
4 Sapling/Shrub Stratum (Plot size: 30 ft)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
( /				Prevalence Index worksheet:
1				
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total	Cover	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )		N	540	UPL species x 5 =
1. Agrostis capillaris	38	Yes	FAC	Column Totals: (A) (B)
2. Dactylis glomerata	35	Yes	FACU	
3. Phalaris arundinacea	15	No	FACW	Prevalence Index = B/A =
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Hypochaeris radicata	2	No	FACU	Rapid Test for Hydrophytic Vegetation
6				Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
••				
				Morphological Adaptations <sup>1</sup> (Provide supporting
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8 9				
8 9 10				data in Remarks or on a separate sheet)
8 9 10 11				data in Remarks or on a separate sheet)
8 9 10 11 <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )	100	= Total	  Cover	data in Remarks or on a separate sheet) U Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) Indicators of hydric soil and wetland hydrology must
8 9 10 11 <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> ) 1		= Total	  Cover	data in Remarks or on a separate sheet) U Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic
8.	100	= Total	Cover	data in Remarks or on a separate sheet) U Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8.	   	= Total	Cover	data in Remarks or on a separate sheet) U Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation

Profile Desc	ription: (Describ	e to the	depth n	eeded to docur	nent the i	ndicator	or confirm	n the ab	sence	of indicators.)
Depth	Matrix			Redo	x Features	<u> </u>				
(inches)	Color (moist)	%	Colo	or <u>(moist)</u>	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e	Remarks
0 - 8	10YR 3/2	99	7.5	6YR 4/6	1	С	PL,M	SiLo		Silt Loam
8 - 16	10YR 3/2	93	5Y	R 3/4	7	С	PL,M	SiLo		Silt loam
							·			
						· <u> </u>				
,										
1Turney 0-0				luced Metric CC					21 -	
	oncentration, D=D Indicators: (Appl						ed Sand G			cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils <sup>3</sup> :
						50.)				n Muck (A10)
	ipedon (A2)			Sandy Redox (S Stripped Matrix						Parent Material (TF2)
Black His				Loamy Mucky M		) (excep	t MLRA 1)			/ Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamy Gleyed N		,			-	er (Explain in Remarks)
	Below Dark Surfa	ace (A11)		Depleted Matrix					-	、 · · · · · · · · · · · · · · · · · · ·
Thick Da	rk Surface (A12)		×	Redox Dark Sur	face (F6)			<sup>3</sup> Ir	ndicate	ors of hydrophytic vegetation and
-	ucky Mineral (S1)			Depleted Dark S	Surface (F	7)			wetla	and hydrology must be present,
	leyed Matrix (S4)			Redox Depressi	ons (F8)				unles	ss disturbed or problematic.
	_ayer (if present)	:								
Type: No				-						
Depth (inches): Hydric Soil Present? Yes 🗵 No 🗌										
Remarks:										
Hydric soil	criteria met thr	ough in	dicato	r F6.						
<b>,</b>		5								
HYDROLO										
-	drology Indicator									
Primary Indic	ators (minimum o	f one requ	iired; ch						Seco	ndary Indicators (2 or more required)
Surface \	Water (A1)			🗌 Water-Stai	ned Leave	es (B9) ( <b>e</b>	except ML	RA	🗆 W	/ater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)			1, 2, 4/	A, and 4B)					4A, and 4B)
Saturatio	n (A3)			Salt Crust	(B11)				🗆 D	rainage Patterns (B10)
Water Mater Mater	arks (B1)			Aquatic Inv	rertebrates	s (B13)			🗆 D	ry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Od	or (C1)			🗆 s	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized R	hizospher	es along	Living Roc	ots (C3)	ΠG	eomorphic Position (D2)
Algal Ma	t or Crust (B4)			Presence of	of Reduce	d Iron (C4	4)		🗆 s	hallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iron	n Reductio	on in Tille	d Soils (C6	6)	□ F.	AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or			1) ( <b>LRR A</b>	)		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria	0,	· /	Other (Exp	lain in Rer	marks)			ΓF	rost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ve Surfac	e (B8)							
Field Obser	vations:				Mana					
Surface Wate	er Present?	Yes 🗌	No 🗙	Depth (inches						
Water Table	Present?	Yes 🗌	No 🗙	Depth (inches	<sub>s):</sub> <u>None</u>					
Saturation P	resent?	Yes 🗌	No 🗙	Depth (inches	<sub>;):</sub> None		Wet	land Hyd	Irolog	y Present? Yes 🗌 No 🗵
(includes cap		man	mente	ing wall series	abotes	ovieus is	oportin)	if our list	blei	
Describe Re	corded Data (strea	un gauge,	monitol	ing weil, aerial j	onotos, pr	evious in	spections),	ii avalla	ue:	
Demo										
Remarks:										
No wetland	d hydrology crit	teria me	t.							

Project/Site: 1244.0001 Jackson Highway	City/County	<u>:</u> Chehalis / Lewis	Sampling Date: <u>6/25/19</u>				
Applicant/Owner: Puget Western, Inc.		State: WA	Sampling Point: DP-108				
Investigator(s): Kyla Caddey, Ryan Krapp	9	Section, Township, Range: <u>11</u>	/ 13N / 02W				
Landform (hillslope, terrace, etc.): Valley Floor			ncave Slope (%): <u>1</u>				
Subregion (LRR): <u>A2</u>							
Soil Map Unit Name: <u>Reed silty clay loam</u>		NWI clas	ssification: N/A				
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes	No 🗵 (If no, explain in Rem	arks.)				
Are Vegetation, Soil, or Hydrology s	significantly disturbed?	Are "Normal Circumstances	s" present? Yes 🗵 No 🗌				
Are Vegetation, Soil, or Hydrology n	naturally problematic?	(If needed, explain any ansv	vers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Yes 🗵 No [	Is the	e Sampled Area					
Hydric Soil Present? Yes 🗵 No [		•	× No				
Wetland Hydrology Present? Yes 🗷 No [							
Remarks:							

All three wetland criteria met. Data collected in Wetland G. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 2 (A)	)
2				Total Number of Dominant	
3				Species Across All Strata: <u>3</u> (B)	
4					
		= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/E	D١
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )		, etai e		$\frac{111}{1100} \text{ (All of FAC)}  (All $	2)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )		i otar o	0101	UPL species x 5 =	
1 Ranunculus repens	20	Yes	FAC	Column Totals:         (A)         (E)	B)
2. Anthoxanthum odoratum	20	Yes	FACU		J)
3. Juncus effusus	20	Yes	FACW	Prevalence Index = B/A =	
4. Agrostis capillaris	15	No	FAC	Hydrophytic Vegetation Indicators:	
5. Holcus lanatus	15	No	FAC	Rapid Test for Hydrophytic Vegetation	
6. Phalaris arundinacea	10	No	FACW	☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide supporting	
9				data in Remarks or on a separate sheet)	
10				□ Wetland Non-Vascular Plants <sup>1</sup>	
		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11	100	= Total C		<sup>1</sup> Indicators of hydric soil and wetland hydrology must	t
Woody Vine Stratum (Plot size: 30 ft)	100	- Total C	over	be present, unless disturbed or problematic.	
<u>1.</u>					
2		·		Hydrophytic	
£	0	= Total C	over	Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum <u>0</u>	<u> </u>		UVEI		
Remarks: Hydrophytic vegetation criteria met thro	ough the	dominan	co tost	•	
	Jugn tile	uunninalli	ບອ ເອວເ.		

Profile Desc	ription: (Descril	be to the o	lepth ne	eded to docur	nent the	indicator	or confir	m the al	bsence of indicators.)
Depth	Matrix	(		Redo	x Feature	<u>s</u>			
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	Ire Remarks
0 - 7	10YR 3/2	99	5Y	R 4/6	1	С	PL,M	SiLo	Silt Loam
7 - 16	10YR 3/2	85	5YI	R 4/6	15	С	PL,M	SiLo	Silt Ioam
	oncentration, D=D						ed Sand C		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (App	licable to				ea.)			ndicators for Problematic Hydric Soils <sup>3</sup> :
	( )			Sandy Redox (S				_	2 cm Muck (A10)
Black His	ipedon (A2)			Stripped Matrix ₋oamy Mucky №	. ,			_	<ul> <li>☐ Red Parent Material (TF2)</li> <li>☐ Very Shallow Dark Surface (TF12)</li> </ul>
	n Sulfide (A4)			_oamy Gleyed I				_	Other (Explain in Remarks)
	Below Dark Surfa	ace (A11)		Depleted Matrix		/		L	
	rk Surface (A12)	( )		, Redox Dark Sur				3	Indicators of hydrophytic vegetation and
🔲 Sandy M	ucky Mineral (S1)	)		Depleted Dark S	Surface (F	7)			wetland hydrology must be present,
	leyed Matrix (S4)		🗆 F	Redox Depressi	ions (F8)				unless disturbed or problematic.
	Layer (if present)	):							
Type: No				-					
Depth (ind	ches):							Hydi	ric Soil Present? Yes 🗵 No 🗌
Remarks:									
Hydric soil	criteria met th	rough in	dicator	<sup>·</sup> F6.					
HYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
-	cators (minimum c		ired; che	eck all that appl	y)				Secondary Indicators (2 or more required)
Surface V				☐ Water-Stai		es (B9) ( <b>e</b>	xcept ML	RA	☐ Water-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				A, and 4B				4A, and 4B)
☐ Saturatio	. ,			Salt Crust	•	,			Drainage Patterns (B10)
U Water Ma				Aquatic Inv		s (B13)			Dry-Season Water Table (C2)
	t Deposits (B2)					. ,			Saturation Visible on Aerial Imagery (C9)
Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)									
	t or Crust (B4)			Presence of	•	-	-	. ,	Shallow Aquitard (D3)
-	osits (B5)			Recent Iro			-	6)	▼ FAC-Neutral Test (D5)
Surface S	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) (LRR 4	A)	Raised Ant Mounds (D6) (LRR A)
Inundation	on Visible on Aeria	al Imagery	(B7)	Other (Exp	lain in Re	marks)		-	Frost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ave Surfac	e (B8)						
Field Obser	vations:								
Surface Wate	er Present?	Yes 🗌	No 🗙	Depth (inches	<sub>s):</sub> <u>None</u>				
Water Table	Present?	Yes 🗌	No 🗙	Depth (inches					
Saturation P		Yes 🗌	No 🗵	Depth (inches			We	tland Hy	drology Present? Yes 🗵 No 🗌

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

Remarks:

Wetland hydrology criteria met indirectly through secondary indicators D2 and D5. Consideration of sub-dominants required for FAC-Neutral determination.

Project/Site: 1244.0001 Jackson Highway	City/County	<u>r</u> Chehalis / Lewis	Sampling Date: <u>6/25/19</u>				
Applicant/Owner: Puget Western, Inc.		State: WA	Sampling Point: DP-109				
Investigator(s): Kyla Caddey, Ryan Krapp		Section, Township, Range: <u>11</u>	/ 13N / 02W				
Landform (hillslope, terrace, etc.): Valley Floor			oncave Slope (%): 2				
Subregion (LRR): <u>A2</u>							
Soil Map Unit Name: Reed silty clay loam			ssification: N/A				
Are climatic / hydrologic conditions on the site typical for the	his time of year? Yes 🗌	No 🗵 (If no, explain in Rem	arks.)				
Are Vegetation, Soil, or Hydrology si	ignificantly disturbed?	Are "Normal Circumstance	s" present? Yes 🗵 No 🗌				
Are Vegetation, Soil, or Hydrology na	aturally problematic?	(If needed, explain any ans	wers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Yes 🗵 No 🗌 Hydric Soil Present? Yes 🗵 No		e Sampled Area					
Hydric Soil Present?       Yes X       No □         Wetland Hydrology Present?       Yes X       No □	withi	in a Wetland? Yes	X No				
Remarks:							

All three wetland criteria met. Data collected in Wetland H. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				
3.				Total Number of Dominant Species Across All Strata: 2 (B)
4				
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				
1				Prevalence Index worksheet:
2		·		Total % Cover of: Multiply by:
3		·		OBL species x 1 =
4		<u> </u>		FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Phalaris arundinacea	30	Yes	FACW	Column Totals: (A) (B)
2. Ranunculus repens	25	Yes	FAC	
3. Agrostis capillaris	15	No	FAC	Prevalence Index = B/A =
4. Lotus corniculatus	15	No	FAC	Hydrophytic Vegetation Indicators:
5. Anthoxanthum odoratum	10	No	FACU	Rapid Test for Hydrophytic Vegetation
6. Hypochaeris radicata	5	No	FACU	☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				☐ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum 0				
Remarks: Hydrophytic vegetation criteria met thr	ough the	dominan	ce test.	

Profile Desc	cription: (Descril	be to the de	pth needed to docu	ument the	indicato	r or confirm	the ab	sence of indicators.)		
Depth	Matrix		Red	lox Featur	es					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur			
0 - 2	10YR 3/1	100	-	-	-		SiLo	Silt Loam		
2 - 5	10YR 3/1	97	7.5 YR 4/4	3	С	PL,M	SiLo	Silt loam		
5 - 16	10YR 3/1	90	7.5 YR 4/4	10	С	PL,M	SiLo	Silt loam		
<sup>1</sup> Type: C=C	oncentration D=D	epletion RN	/=Reduced Matrix, 0	CS=Cover	ed or Coat	ed Sand G	ains	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
			II LRRs, unless oth					idicators for Problematic Hydric Soils <sup>3</sup> :		
Histosol	(A1)		Sandy Redox	(S5)				] 2 cm Muck (A10)		
Histic Ep	oipedon (A2)		Stripped Matrix					Red Parent Material (TF2)		
Black His	stic (A3)		Loamy Mucky	Mineral (F	1) ( <b>excep</b>	t MLRA 1)		] Very Shallow Dark Surface (TF12)		
Hydroge	n Sulfide (A4)		Loamy Gleyed	Matrix (F2	2)			] Other (Explain in Remarks)		
Depleted	d Below Dark Surfa	ace (A11)	Depleted Matri	x (F3)						
	Thick Dark Surface (A12) Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and					ndicators of hydrophytic vegetation and				
Sandy M	Sandy Mucky Mineral (S1)   Depleted Dark Surface (F7)					wetland hydrology must be present,				
	leyed Matrix (S4)		Redox Depressions (F8)					unless disturbed or problematic.		
	Layer (if present)	):								
Type: <u>NC</u>										
Depth (in	ches):						Hydr	ic Soil Present? Yes 🗵 No 🗌		
Remarks:										
Hydric soil	criteria met th	rough indi	cator F6.							
HYDROLO	GY									
Wetland Hy	drology Indicato	rs:								
-			ed; check all that ap	oly)				Secondary Indicators (2 or more required)		
Surface			☐ Water-Sta		/es (B9) (	except MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,		
	iter Table (A2)			IA, and 4		•		4A, and 4B)		
Saturatio	on (A3)		Salt Crus	t (B11)				Drainage Patterns (B10)		
U Water M			Aquatic Ir		es (B13)			Dry-Season Water Table (C2)		
	nt Deposits (B2)		☐ Hydroger		. ,			Saturation Visible on Aerial Imagery (C9)		
	posits (B3)					Living Roo	ts (C3)	Geomorphic Position (D2)		
	at or Crust (B4)				-	-	.5 (00)	Shallow Aquitard (D3)		
					`	,	`			
☐ Iron Dep	Soil Cracks (B6)		<ul> <li>Recent Iron Reduction in Tilled Soils (C6</li> <li>Stunted or Stressed Plants (D1) (LRR A</li> </ul>				,			

			(LKK A)	$\Box$ Raised Antiviounds (D6) ( <b>LRR A</b> )				
Inundation Visible on Aeri	al Imagery (B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)				
Sparsely Vegetated Conc	ave Surface (B8	)						
Field Observations:								
Surface Water Present?	Yes 🗌 🛛 No 🛛	Depth (inches): None						
Water Table Present?	Yes 🗌 🛛 No 🛽	Depth (inches): None						
Saturation Present? (includes capillary fringe)	Yes 🗌 No 👂	Depth (inches): None	Wetland H	ydrology Present?	Yes 🗵 No 🗌			
Describe Recorded Data (stre	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:								
Wetland hydrology criteria met through secondary indicators D2 and D5.								

US Army Corps of Engineers

Project/Site: 1244.0001 Jackson Highway City/C	<sub>County:</sub> <u>Chehalis / Lewis</u>	Sampling Date: 6/25/19
Applicant/Owner: Puget Western, Inc.	State: WA	_ Sampling Point: DP-110
Investigator(s): Kyla Caddey, Ryan Krapp	Section, Township, Range: <u>11 / 13</u>	BN / 02W
	al relief (concave, convex, none): <u>Conve</u>	
	021 Long: -122.903182	
Soil Map Unit Name: Reed silty clay loam	NWI classifica	ation: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for this time of year? Y		
Are Vegetation, Soil, or Hydrology significantly disturbe	d? Are "Normal Circumstances" pre	sent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic'	? (If needed, explain any answers i	n Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present?       Yes I       No IX         Hydric Soil Present?       Yes IX       No IX         Wetland Hydrology Present?       Yes IX       No IX	Is the Sampled Area within a Wetland? Yes 🗌 N	lo 🗵
Remarks: Not all three wetland criteria met; only hydric soil present. Ou average at 58 percent of normal.	nt plot between Wetlands E and H. Preci	pitation was slightly below

Tree Stratum (Plot size: 30 ft)		Dominant Species?		Dominance Test worksheet:	
1				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2				Total Number of Dominant	
3				-	(B)
4					(-)
Sapling/Shrub Stratum (Plot size: 30 ft)		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u>	(A/B)
				Prevalence Index worksheet:	
1					
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4		·		FACW species x 2 =	
5		·		FAC species x 3 =	
	0	= Total C	Cover	FACU species x 4 =	_
Herb Stratum (Plot size: <u>10 ft</u> )	40	Yes	FAC	UPL species x 5 =	_
1. Ranunculus repens				Column Totals: (A)	_ (B)
2. Anthoxanthum odoratum	30	Yes	FACU		
3. Agrostis capillaris	12	No	FAC	Prevalence Index = B/A =	
4. Hypochaeris radicata	10	No	FACU	Hydrophytic Vegetation Indicators:	
<sub>5.</sub> Holcus lanatus	5	No	FAC	Rapid Test for Hydrophytic Vegetation	
6. Dactylis glomerata	3	No	FACU	□ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8		·		Morphological Adaptations <sup>1</sup> (Provide suppor data in Remarks or on a separate sheet)	
9				□ Wetland Non-Vascular Plants <sup>1</sup>	
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	in)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology r	,
	100	= Total C	Cover	be present, unless disturbed or problematic.	nust
Woody Vine Stratum (Plot size: <u>30 ft</u> )					
1		·		Hydrophytic	
2	0			Vegetation Present? Yes ☐ No ⊠	
% Bare Ground in Herb Stratum 0	0	= Total C	over		
Remarks: No hydrophytic vegetation criteria met	prevalen	ice index	not warr	anted due to lack of combined hydric soi	ls and
hydrology.					

# SOIL

Profile Desc	cription: (Describ	e to the d	epth ne	eded to docun	nent the i	ndicator	or confirm	the abs	sence of indicators.)
Depth	Matrix			Redo	x Feature	<u>S</u>			
(inches)	Color (moist)	%	Colo	<u>r (moist)</u>	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	
0 - 3	10YR 3/1	100	-		-	-	-	SiLo	Silt loam
3 - 8	10YR 3/1	95	7.5	YR 4/6	5	С	PL,M	SiLo	Silt loam
8 - 16	10YR 3/1	90	7.5	YR 4/6	10	С	PL,M	SiLo	Silt loam
					·	·			
			·			·			
			·		· ·	·			·
					·	·			
<sup>1</sup> Type: C=C	oncentration, D=De	epletion R	M=Red	uced Matrix_CS	=Covered	d or Coate	d Sand Gr	ains	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Appl								dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol				Sandy Redox (S		•			2 cm Muck (A10)
	ipedon (A2)			Stripped Matrix (	-				
Black His	stic (A3)		Πι	oamy Mucky M	ineral (F1	) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
_ , 0	n Sulfide (A4)			oamy Gleyed N					] Other (Explain in Remarks)
_ ·	Below Dark Surfa	ce (A11)		Depleted Matrix	. ,			0.	
	rk Surface (A12)			Redox Dark Sur	• • •			٩lr	ndicators of hydrophytic vegetation and
	lucky Mineral (S1) leyed Matrix (S4)			Depleted Dark S Redox Depressi	•	()			wetland hydrology must be present, unless disturbed or problematic.
	Layer (if present):			Tedox Depressi					diffess distribed of problematic.
Type: NC									
Depth (in				-				Hydri	c Soil Present? Yes 🗵 No 🗌
Remarks:								nyan	
	criteria met thr	ough ind	licotor	Fe					
Tiyunc son	chiena met un	ougnino	licator	Γ0.					
HYDROLO									
-	drology Indicator								
Primary India	cators (minimum of	f one requi	red; che	eck all that apply	()				Secondary Indicators (2 or more required)
Surface S	Water (A1)			U Water-Stair	ned Leave	es (B9) ( <b>e</b> z	ccept MLR	A	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)			1, 2, 4A	, and 4B	)			4A, and 4B)
Saturatio	on (A3)			Salt Crust (	B11)				Drainage Patterns (B10)
Water Mater Mater Mater	arks (B1)			Aquatic Inv	ertebrates	s (B13)			Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Oc	lor (C1)			Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)							Geomorphic Position (D2)		
	t or Crust (B4)			Presence o		-			Shallow Aquitard (D3)
-	osits (B5)			Recent Iror			•	, ,	FAC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or			1) ( <b>LRR A</b> )		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial		'	Other (Expl	ain in Rei	marks)			Frost-Heave Hummocks (D7)
	Vegetated Concar	ve Surface	(B8)						
Field Obser					None				
Surface Wat			No 🗙	Depth (inches					
Water Table			No 🗵	Depth (inches					
Saturation P		Yes 🗌 🛛	No 🗙	Depth (inches	): <u>Inone</u>		Wetla	and Hyd	Irology Present? Yes 🗌 No 🗵
(includes cap Describe Re	corded Data (strea	m gauge. i	monitor	ing well, aerial r	photos, pr	evious ins	pections).	if availat	ble:
		5 5-,-		J ,	, թ.				
Remarks:									
Romano.									

No wetland hydrology criteria met.

Project/Site: 1244.0001 Puget Western City/	County: Chehalis / Lewis	Sampling Date: 6/25/19						
Applicant/Owner: Puget Western, Inc.	State: WA	Sampling Point: DP-111						
Investigator(s): Kyla Caddey	Section, Township, Range:	11 / 13N / 02W						
Landform (hillslope, terrace, etc.): Valley Floor		Concave Slope (%): 1						
Subregion (LRR): <u>A2</u> Lat: <u>46.625</u>	016Long:122.9	0525359 Datum: WGS-84						
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI	classification: <u>N/A</u>						
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 disturbe	ed? Are "Normal Circumstan	ces" present? Yes 🗵 No 🗌						
Are Vegetation, Soil, or Hydrology naturally problematic	? (If needed, explain any a	nswers in Remarks.)						
SUMMARY OF FINDINGS – Attach site map showing san	npling point locations, trar	sects, important features, etc.						
Hydrophytic Vegetation Present?       Yes X       No I         Hydric Soil Present?       Yes X       No I         Wetland Hydrology Present?       Yes I       No X	Is the Sampled Area within a Wetland? Ye	es 🗌 No 🛛						
Remarks: Not all three wetland criteria met; lacks wetland hydrology. Upland plot to Wetland I. Hydrology determination based upon MP-17 monitoring well data located ~12 feet to the east at similar topographic elevation. Precipitation was slightly below average at 58 percent of normal.								

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

•	Abaaluta	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u> )		Species?		
				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
1				
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	Cover	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				
3				OBL species x 1 =
4		·		FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> ) 1. Alopecurus pratensis	30	Yes	FAC	UPL species x 5 =
				Column Totals: (A) (B)
2. Agrostis capillaris	25	Yes	FAC	Development Instance D/A
3. Anthoxanthum odoratum	15	No	FACU	Prevalence Index = B/A =
4. Lotus corniculatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Hypochaeris radicata	10	No	FACU	Rapid Test for Hydrophytic Vegetation
6. Ranunculus repens	10	No	FAC	☑ Dominance Test is >50%
7. Symphyotrichum sp.*	5	No	FAC	Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				
10				Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	105	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Ludroph tio
2		·		Hydrophytic Vegetation
	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Hydrophytic vegetation criteria me	at throug	ih tha di	ominana	e test
*Could not be identified to species	s, assum	IEU FAC	2 101 SCO	ning purposes.

US Army Corps of Engineers

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)												
Depth <u>Matrix</u>			Redox Features									
(inches)	Color (moist)	%		or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture				
0 - 7	10YR 3/2	99	5Y	R 4/6	1	С	PL,M	SiLo	Silt Loam			
7 - 16	10YR 3/2	85	5Y	R 4/6	15	С	PL,M	SiLo	Silt loam			
	Concentration, D=E	Depletion F		luced Matrix C		ed or Coate	ed Sand G	rains	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
	Indicators: (App								icators for Problematic Hydric Soils <sup>3</sup> :			
Histosol				، Sandy Redox (S		,		2 cm Muck (A10)				
	pipedon (A2)			Stripped Matrix				Red Parent Material (TF2)				
Black Hi	istic (A3)			Loamy Mucky M	lineral (F	1) (except	t MLRA 1)					
	en Sulfide (A4)			Loamy Gleyed I		2)			Other (Explain in Remarks)			
	d Below Dark Surf	face (A11)		Depleted Matrix	. ,			2.				
Thick Dark Surface (A12) Redox Dark Surface (F6)									<sup>3</sup> Indicators of hydrophytic vegetation and			
Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)									wetland hydrology must be present, unless disturbed or problematic.			
	Layer (if present			Redex Depress								
Type: No		,-										
Depth (in	nches):			-				Hydric	Hydric Soil Present? Yes 🗵 No 🗌			
Remarks:												
	l criteria met th	rough in	dicato	F6								
Tryunc 30h	i chitena met ti	nouginin	uicato	10.								
HYDROLO												
-	drology Indicato											
	icators (minimum o	of one requ	ired; ch			(= - ) (			Secondary Indicators (2 or more required)			
Surface Water (A1) Water-Stained Leaves (B9) (except MLRA								RA [	Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,			
High Water Table (A2)         1, 2, 4A, and 4B)								4A, and 4B)				
Saturation (A3) Salt Crust (B11)								<ul> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> </ul>				
Water Marks (B1)       Aquatic Invertebrates (B13)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)								Saturation Visible on Aerial Imagery (C9)				
							Living Roc	L nte (C3)	Geomorphic Position (D2)			
<ul> <li>Drift Deposits (B3)</li> <li>Algal Mat or Crust (B4)</li> <li>Oxidized Rhizospheres along Living Roo</li> <li>Presence of Reduced Iron (C4)</li> </ul>								Jis (C3) [	Shallow Aquitard (D3)			
	posits (B5)		Recent Iron Reduction in Tilled Soils (C6)						☐ FAC-Neutral Test (D5)			
-	Soil Cracks (B6)						``	,	Raised Ant Mounds (D6) ( <b>LRR A</b> )			
	<ul> <li>Soil Cracks (B6)</li> <li>Stunted or Stressed Plants (D1) (LRR A)</li> <li>ion Visible on Aerial Imagery (B7)</li> <li>Other (Explain in Remarks)</li> </ul>								Frost-Heave Hummocks (D7)			
□ Sparsely Vegetated Concave Surface (B8)												
Field Obser	-		( )									
Surface Wat	ter Present?	Yes 🗌	No 🗙	Depth (inches	<sub>s):</sub> None	Э						
				Depth (inches								
Water Table	Present?	Yes 🗌	NO IXI	Deput titlotes		•						
Water Table Saturation F		Yes □ Yes □	No 🗵 No 🕅				Wet	land Hvdr	ology Present? Yes 🗖 No 🖂			
Saturation F (includes ca	Present? pillary fringe)	Yes 🗌	No 🗙	Depth (inches	<sub>s):</sub> None	9		-	ology Present? Yes 🗌 No 🗵			
Saturation F (includes ca Describe Re	Present? pillary fringe) ecorded Data (stre	Yes □ am gauge,	No 🗵 monitor	Depth (inches	s): <u>None</u> photos, p	e revious ins	spections)	, if availab				

Remarks:

No wetland hydrology criteria met according to MP-17 well monitoring data.

Project/Site: 1244.0001 Puget Western	City/County:	<u>Chehalis / Lewis</u>	Sam	pling Date: 6/25/19
Applicant/Owner: Puget Western, Inc.		State: WA	Sam	pling Point: DP-112
Investigator(s): Kyla Caddey		Section, Township, Range:	11 / 13N / 0	2W
Landform (hillslope, terrace, etc.): Valley Floor		f (concave, convex, none):		
Subregion (LRR): A2 Lat:				
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slo		NWI		
Are climatic / hydrologic conditions on the site typical for this time of				
Are Vegetation, Soil, or Hydrology significantly	/ disturbed?	Are "Normal Circumsta	nces" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally pro	oblematic?	(If needed, explain any a	answers in Rem	arks.)
SUMMARY OF FINDINGS – Attach site map showi	ng sampling	g point locations, tra	nsects, imp	ortant features, etc.
Hydrophytic Vegetation Present?     Yes X     No        Hydric Soil Present?     Yes X     No		e Sampled Area	∕es □ No 🕅	
Wetland Hydrology Present?     Yes     No       Remarks:     Image: State of the s				

Not all three wetland criteria met; lacks wetland hydrology. Upland plot to Wetland J. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>4</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>4</u> (B)
4				Demonst of Deminent Crossies
	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	_			
<sub>1.</sub> Rosa nutkana	5	Yes	FAC	Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	5	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Agrostis capillaris	30	Yes	FAC	Column Totals: (A) (B)
2. Holcus lanatus	25	Yes	FAC	
3. Schedonorous arundinaceus	20	Yes	FAC	Prevalence Index = B/A =
4. Anthoxanthum odoratum	10	No	FACU	Hydrophytic Vegetation Indicators:
5. Alopecurus pratensis	10	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Ranunculus repens	5	No	FAC	☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				$\square$ Wetland Non-Vascular Plants <sup>1</sup>
10				
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Hydrophytic
2				Vegetation
0	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Hvdrophytic vegetation criteria n	net throu	uah don	ninance	etest

Profile Desc	cription: (Descril	be to the d	epth ne	eded to docur	nent the i	indicator	or confirm	n the ab	osence of indicators.)
Depth	Matrix			Redo	x Feature	<u>s</u>			
(inches)	Color (moist)	<u>%</u>	<u>Colo</u>	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	
0 - 4	10YR 3/1	100			-		-	SiLo	Silt Loam
4 - 8	10YR 3/1	99	7.5	YR 3/4	1	С	PL,M	SiLo	Silt loam
8 - 16	10YR 3/1	93	7.5	YR 3/4	7	С	PL,M	SiLo	Silt Ioam
							·		
<sup>1</sup> Tvpe: C=C	oncentration, D=D	epletion. R	M=Red	uced Matrix. CS	S=Covere	d or Coate	ed Sand G	rains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (App								ndicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (S	5)			C	2 cm Muck (A10)
	ipedon (A2)			Stripped Matrix	-				Red Parent Material (TF2)
Black His				_oamy Mucky N			MLRA 1)	Ľ	Very Shallow Dark Surface (TF12)
_ , ,	n Sulfide (A4)			_oamy Gleyed N		)		Ľ	] Other (Explain in Remarks)
— ·	Below Dark Surfa	ace (A11)		Depleted Matrix	. ,			31	la d'a channa af la cilia a la d'a cana a hadiana an d
	irk Surface (A12) lucky Mineral (S1)			Redox Dark Sur Depleted Dark S	· · ·	7)		4	Indicators of hydrophytic vegetation and wetland hydrology must be present,
-	leyed Matrix (S4)			Redox Depressi	•	1)			unless disturbed or problematic.
	Layer (if present)	:	·		0.110 (1. 0)				
Type: NC				_					
Depth (inches): Hydric Soil Present? Yes X No									
Remarks:									
Hvdric soil	criteria met th	rouah inc	licator	F6.					
HYDROLO	CY								
-	drology Indicato								
	cators (minimum c	of one requi	red; che						Secondary Indicators (2 or more required)
	Water (A1)			Water-Stain		• • • •	xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
-	ter Table (A2)				A, and 4B	)			4A, and 4B)
Saturatio				Salt Crust (		- (D42)			Drainage Patterns (B10)
☐ Water M	. ,			Aquatic Inv		. ,			Dry-Season Water Table (C2)
	t Deposits (B2)						Living Dec	ta (C2)	Saturation Visible on Aerial Imagery (C9)
-	osits (B3) t or Crust (B4)					-	-	$\operatorname{s}(C3)$	Geomorphic Position (D2)
	osits (B5)			Presence of Recent Iror		-	-	:)	<ul> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> </ul>
	Soil Cracks (B6)			Stunted or			`	,	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	al Imagery (	B7)	Other (Exp				)	Frost-Heave Hummocks (D7)
	Vegetated Conca					manaj			
Field Obser	-		(20)						
Surface Wat		Yes 🗌	No 🗙	Depth (inches	): None				
Water Table			No 🛛	Depth (inches					
Saturation P			No 🛛	Depth (inches			Wat	land Hv#	drology Present? Yes 🗌 No 🗵
(includes ca	oillary fringe)								
	corded Data (strea	am gauge,	monitor	ing well, aerial p	ohotos, pr	evious ins	spections),	if availa	able:
Remarks <sup>.</sup>									

No wetland hydrology criteria met.

Project/Site: 1244.0001 Puget WesternCity/0	<sub>County:</sub> Chehalis / Lewis	Sampling Date: 6/26/19
Applicant/Owner: Puget Western, Inc.	State: WA	Sampling Point: DP-113
Investigator(s): Kyla Caddey	Section, Township, Range: <u>11 / 13</u>	N / 02W
Landform (hillslope, terrace, etc.): Valley Floor Loc	al relief (concave, convex, none): <u>Concav</u>	
Subregion (LRR): <u>A2</u>		
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI classifica	tion: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Y		
Are Vegetation, Soil, or Hydrology significantly disturbe	d? Are "Normal Circumstances" pres	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic	? (If needed, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	npling point locations, transects,	important features, etc.
Hydrophytic Vegetation Present?       Yes ⋈ No □         Hydric Soil Present?       Yes ⋈ No □         Wetland Hydrology Present?       Yes ⋈ No □	Is the Sampled Area within a Wetland? Yes 🗵 No	
Remarks: All three wetland criteria met. Data collected in Wetland J. Hy Precipitation was slightly below average at 58 percent of norm		monitoring efforts.

•	Abaaluta	Dominon	Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 30 ft)	Absolute % Cover					
				Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
1					<u> </u>	(~)
2				Total Number of Dominant	4	-
3				Species Across All Strata:	4	(B)
4				Percent of Dominant Species		
Or a line of Ohmeth, Other transport (Dirth size of Oh)	0	= Total C	Cover	That Are OBL, FACW, or FAC:	100%	(A/B)
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> )				Prevalence Index worksheet:		
1						
2				Total % Cover of:	Multiply by:	
3		. <u></u>	. <u> </u>	OBL species >		
4		. <u></u>		FACW species >	< 2 =	_
5				FAC species	< 3 =	_
	0	= Total C	Cover	FACU species >	< 4 =	_
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species	< 5 =	_
1. Phalaris arundinacea	30	Yes	FACW	Column Totals: (/	۹)	(B)
2. Schedonorous arundinaceus	25	Yes	FAC		,	_ 、 /
3. Alopecurus aequalis	25	Yes	OBL	Prevalence Index = B/A =	=	
4. Alopecurus pratensis	20	Yes	FAC	Hydrophytic Vegetation Indica	ators:	
5				Rapid Test for Hydrophytic	Vegetation	
6				► Dominance Test is >50%		
				☐ Prevalence Index is ≤3.0 <sup>1</sup>		
7				Morphological Adaptations <sup>1</sup>	(Provide support	tina
8				data in Remarks or on a		
9				Wetland Non-Vascular Plan	lts <sup>1</sup>	
10				Problematic Hydrophytic Ve	egetation <sup>1</sup> (Explai	n)
11	400			<sup>1</sup> Indicators of hydric soil and we	•	,
Marchelling Othersteiner (Distainer 00 ft)	100	= Total C	Cover	be present, unless disturbed or		nuot
Woody Vine Stratum (Plot size: <u>30 ft</u> )						
1		. <u> </u>		Hydrophytic		
2				Vegetation		
	0	= Total C	Cover	Present? Yes 🗵 N	lo 🗋	
% Bare Ground in Herb Stratum 0						
Remarks: Hydrophytic vegetation criteria met thr	ouah the	dominan	ce test.			

Profile Desc	cription: (Describe	to the d	epth ne	eded to docun	nent the i	ndicator	or confirm	m the al	osence	of indicators.)
Depth	Matrix			Redox	K Feature	<u>s</u>				
(inches)	Color (moist)	%	Colo	<u>r (moist)</u>	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ire	Remarks
0 - 3	10YR 3/2	100	-		-	-	-	SiLo		Silt Loam
3 - 9	10YR 3/1	93	10	/R 4/6	7	С	PL,M	SiLo		Silt loam
9 - 16	10YR 4/1	90	10	/R 4/6	10	С	PL,M	CILo		Clay Loam
					·					
						·				
					·	·				
						·				
			<u> </u>							
		<u> </u>	<u> </u>							
<sup>1</sup> Tvpe: C=C	oncentration, D=De	oletion. R	M=Red	uced Matrix. CS	=Covered	d or Coate	ed Sand G	Frains.	<sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
	Indicators: (Appli									rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (S	5)			[	] 2 cm	Muck (A10)
Histic Ep	pipedon (A2)			Stripped Matrix (				[	Red	Parent Material (TF2)
🔲 Black Hi				oamy Mucky M			MLRA 1)	[		Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed N				[	] Othe	r (Explain in Remarks)
	Below Dark Surfac	e (A11)		Depleted Matrix				3		
	ark Surface (A12) lucky Mineral (S1)			Redox Dark Sur Depleted Dark S	· · ·	7)		3		rs of hydrophytic vegetation and
	ileyed Matrix (S4)			Redox Depressi		()				nd hydrology must be present, s disturbed or problematic.
	Layer (if present):			Codex Depresent					unico	
Type: NC										
								Present? Yes 🗵 No 🗌		
Remarks:										
	criteria met thro	wah ing	licator	c A11 E2 ou	nd E6					
Tryunc son		ugii inc	licalui	5 ATT, F5, ai	iu Fo.					
HYDROLO										
Wetland Hy	drology Indicators	:								
Primary Indi	cators (minimum of	one requi	red; che	eck all that apply	()				Secor	ndary Indicators (2 or more required)
Surface	( )			□ Water-Stair	ned Leave	es (B9) ( <b>e</b>	xcept ML	RA	D W	ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b>
-	ter Table (A2)			1, 2, 4A	, and 4B)					4A, and 4B)
Saturation	on (A3)			Salt Crust (	,				🗌 Dr	ainage Patterns (B10)
Water M	arks (B1)			Aquatic Inv	ertebrates	s (B13)			🗌 Dr	y-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydrogen S					🗌 Sa	aturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Oxidized R	hizospher	es along	Living Roo	ots (C3)	🗙 Ge	eomorphic Position (D2)
-	it or Crust (B4)			Presence o		-	-			nallow Aquitard (D3)
	osits (B5)			Recent Iror				-		AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or		•	1) ( <b>LRR A</b>	<b>.</b> )		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aerial			Other (Expl	ain in Rei	marks)			🗌 Fr	ost-Heave Hummocks (D7)
	Vegetated Concav	e Surface	(B8)							
Field Obser		_	_		Nono					
Surface Wat	er Present?		No 🗙	Depth (inches						
Water Table	Present?		No 🗙	Depth (inches						
Saturation P		Yes 🗌	No 🗵	Depth (inches	): <u>Inone</u>		Wet	land Hy	drology	y Present? Yes 🗵 No 🗌
	pillary fringe) corded Data (strear	n gauge.	monitor	ing well, aerial c	hotos, pr	evious ins	spections)	, if availa	able:	
	,	5 5 ,		J / "F	,		,			
Remarks:										

Wetland hydrology criteria met through secondary indicators D2 and D5.

Project/Site: 1244.0001 Puget Wester	<sub>/:</sub> Chehalis / Lewis		Sampling Date: <u>6/26/19</u>		
Applicant/Owner: Puget Western, Inc.			State: W		Sampling Point: DP-114
Investigator(s): Kyla Caddey			Section, Township, Range	<sub>e:</sub> <u>11 / 13N</u>	/ 02W
Landform (hillslope, terrace, etc.): Valley	Floor				Slope (%): 0
Subregion (LRR): <u>A2</u>		46.621757	Long: <u>-122</u>	.90505597	Datum:
Soil Map Unit Name: Lacamas silt loar	n, 0 to 3 percent s	opes	NV	VI classificatio	on: PEM1A
Are climatic / hydrologic conditions on the s	ite typical for this time	of year? Yes 🗌	No 🗵 (If no, explain in	Remarks.)	
Are Vegetation, Soil, or Hydro	logy significant	ly disturbed?	Are "Normal Circumst	ances" prese	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydro	logy naturally p	roblematic?	(If needed, explain any	answers in F	Remarks.)
SUMMARY OF FINDINGS – Atta	ch site map show	ving samplin	g point locations, tr	ansects, i	mportant features, etc.
Hydric Soil Present? Wetland Hydrology Present?	Yes  No  Yes No  Yes No  No  Yes No  Y		e Sampled Area in a Wetland?	Yes 🗌 No	X
Remarks:					

Not all three wetland criteria met; only hydric soil present. Upland plot for Wetland K. Precipitation was slightly below average at 58 percent of normal.

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

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2				Total Number of Dominant
3		·		Species Across All Strata: <u>1</u> (B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: $0\%$ (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				
1				Prevalence Index worksheet:
2		·		Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5		·		FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Hypochaeris radicata	70	Yes	FACU	Column Totals: (A) (B)
2. Lotus corniculatus	10	No	FAC	
3. Schedonorous arundinaceus	5	No	FAC	Prevalence Index = B/A =
4. Juncus effusus	5	No	FACW	Hydrophytic Vegetation Indicators:
5. Alopecurus pratensis	5	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Dactylis glomerata	3	No	FACU	□ Dominance Test is >50%
7. Parentucellia viscosa	2	No	FAC	□ Prevalence Index is ≤3.0 <sup>1</sup>
8				<ul> <li>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
9				☐ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.
1				I hadron ha dia
2				Hydrophytic Vegetation
	0	= Total C	over	Present? Yes 🗌 No 🗵
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: No hydrophytic vegetation criteria met;	prevalen	ice index	not warra	anted due to lack of combined hydric soil and

hydrology.

Profile Des	cription: (Describ	be to the	depth ne	eded to docur	nent the	indicator	or confirm	the abs	sence o	f indicators.)	
Depth	Matrix			Redo	x Feature	s					
(inches)	Color (moist)	<u>%</u>	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur		Remarks	
0 - 4	10YR 3/2	100			-			SiLo		Silt Loam	
4 - 7	10YR 3/2	99	7.5	YR 4/6	1	С	PL,M	SiLo		Silt loam	
7 - 16	10YR 3/2	95	7.5	YR 4/6	5	С	PL,M	SiLo		Silt loam	
		·									
								_			
<sup>1</sup> Type C=C	oncentration, D=D	epletion	RM=Red	uced Matrix CS	S=Covere	d or Coate	ed Sand Gr	ains	<sup>2</sup> l oca	tion: PL=Pore Lining, M=Matrix	<u> </u>
	Indicators: (App									s for Problematic Hydric Soils	
Histosol				Sandy Redox (S						Juck (A10)	
	bipedon (A2)			Stripped Matrix	-					arent Material (TF2)	
Black Hi	stic (A3)			Loamy Mucky M	. ,	1) (except	MLRA 1)		] Very S	Shallow Dark Surface (TF12)	
Hydroge	en Sulfide (A4)			Loamy Gleyed N	/atrix (F2	2)			] Other	(Explain in Remarks)	
— ·	d Below Dark Surfa	ace (A11)		Depleted Matrix							
	ark Surface (A12)			Redox Dark Sur	, ,			<sup>3</sup> lr		s of hydrophytic vegetation and	
-	lucky Mineral (S1)			Depleted Dark S		7)				d hydrology must be present,	
	Bleyed Matrix (S4)			Redox Depressi	ons (F8)				unless	disturbed or problematic.	
Type: NC		:									
	icites)							Hydri	ic Soil P	resent? Yes 🗵 No 🗌	
Remarks:											
Hydric soil	criteria met thi	rough ir	dicator	<sup>.</sup> F6.							
HYDROLO	GY										
Wetland Hv	drology Indicator	's:									
-	cators (minimum o		uired: ch	eck all that apply	V)				Second	ary Indicators (2 or more requir	ed)
	Water (A1)			Water-Stai		es (BQ) ( <b>e</b>	vcent MI R			ter-Stained Leaves (B9) (MLRA	
	ater Table (A2)				A, and 4B		xcept men			4A, and 4B)	· ·, <i>2</i> ,
Saturatio	. ,			Salt Crust (		')				inage Patterns (B10)	
	larks (B1)			Aquatic Inv		e (B13)				-Season Water Table (C2)	
	nt Deposits (B2)			Hydrogen S		. ,				uration Visible on Aerial Imager	v (C9)
	posits (B3)			Oxidized R			Living Root	te (C3)	_	omorphic Position (D2)	y (00)
	at or Crust (B4)					-	-			llow Aquitard (D3)	
	oosits (B5)			Recent Iror		-	-		_	C-Neutral Test (D5)	
-	Soil Cracks (B6)			Stunted or			• • •	, ,		sed Ant Mounds (D6) (LRR A)	
	on Visible on Aeria	l Imagery	(B7)	Other (Exp			.) (,			st-Heave Hummocks (D7)	
	/ Vegetated Conca		. ,			mantoj					
Field Obser	-		.0 (20)								
Surface Wat		Yes 🗌	No 🗙	Depth (inches	None	)					
Water Table		Yes 🗌	No 🔀	Depth (inches							
				Depth (inches			Made	a va al III val	due le sur l	Dressent2 Vac 🗆 No 🕅	
Saturation P (includes ca		Yes 🗋	No 🗙	Depth (inches	<u>;):</u> <u></u>	,	vvetia	and Hyd	arology	Present? Yes 🗌 No 🗵	
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Describe Re	ecorded Data (strea	am gauge	, monitor	ing well, aerial p	ohotos, pi	revious ins	spections),	if availat	ble:		
Describe Re	ecorded Data (strea	am gauge	, monitor	ing well, aerial p	ohotos, pi	revious in	spections),	if availat	ble:		
Describe Re Remarks:	ecorded Data (strea	am gauge	, monitor	ing well, aerial p	ohotos, pi	revious in:	spections),	if availat	ble:		

Project/Site: 1244.0001 Jackson Highway	City/County:	Chehalis / Lewis	Samp	ling Date: <u>6/26/19</u>
Applicant/Owner: Puget Western, Inc.		State: WA	Samp	ling Point: DP-115
Investigator(s): Kyla Caddey	S	ection, Township, Range:	11 / 13N / 02	2W
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none):		
Subregion (LRR): <u>A2</u>				
Soil Map Unit Name: Lacamas silt loam, 0 to 3 perc		NW		
Are climatic / hydrologic conditions on the site typical for thi				
Are Vegetation, Soil, or Hydrology sig	nificantly disturbed?	Are "Normal Circumsta	nces" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology natu	urally problematic?	(If needed, explain any a	answers in Rema	rks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling	point locations, tra	insects, impo	ortant features, etc.
Hydrophytic Vegetation Present?       Yes ⋈ No □         Hydric Soil Present?       Yes ⋈ No □         Wetland Hydrology Present?       Yes ⋈ No □		Sampled Area	Yes 🗵 No 🗌	
Remarks:			1	

All three wetland criteria met. Data collected in Wetland K. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				· · ·
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Alopecurus aequalis	38	Yes	OBL	Column Totals: (A) (B)
2. Phalaris arundinacea	30	Yes	FACW	(-)
3. Lotus corniculatus	10	No	FAC	Prevalence Index = B/A =
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Hypochaeris radicata	10	No	FACU	Rapid Test for Hydrophytic Vegetation
6. Juncus effusus	2	No	FACW	➤ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				<ul> <li>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
9				☐ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.
1				Hydrophytic
2		·		Vegetation
0	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum 0				
Remarks: Hydrophytic vegetation criteria met thro	ough the	dominand	ce test.	

Profile Description: (Descri	be to the c	ieptn needed to	accument the	indicator	or confirm	the absence	e of indicators.)				
Depth <u>Matri</u>			Redox Feature								
(inches) Color (moist)		Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks				
0 - 4 10YR 3/2	97	10YR 4/6	3	С	PL,M	SiLo	Silt Loam				
4 - 10 10YR 4/1	85	7.5YR 4/6	15	С	PL,M	SiLo	Silt loam				
10 - 16 10YR 5/1	85	7.5YR 4/6	15	С	PL,M	SiLo	Silt loam				
					. <u></u>	. <u> </u>					
<sup>1</sup> Type: C=Concentration, D=I	Depletion	M=Reduced Ma	trix CS=Covere	d or Coate	d Sand G	ains <sup>2</sup> lo	cation: PL=Pore Lining, M=Matrix.				
Hydric Soil Indicators: (Ap)							ors for Problematic Hydric Soils <sup>3</sup> :				
Histosol (A1)		Sandy R		,			n Muck (A10)				
Histic Epipedon (A2)		-	Matrix (S6)				Parent Material (TF2)				
Black Histic (A3)			ucky Mineral (F	1) (except	MLRA 1)		y Shallow Dark Surface (TF12)				
Hydrogen Sulfide (A4)		-	leyed Matrix (F2			Oth	er (Explain in Remarks)				
✗ Depleted Below Dark Sur	ace (A11)	X Depleted	Matrix (F3)								
Thick Dark Surface (A12)			ark Surface (F6)				ors of hydrophytic vegetation and				
Sandy Mucky Mineral (S1	,	— .	Dark Surface (I	=7)			and hydrology must be present,				
Sandy Gleyed Matrix (S4)		Redox D	epressions (F8)			unle	ss disturbed or problematic.				
Restrictive Layer (if present Type: None	):										
Depth (inches): N/A											
Depth (inches):						Hydric Soi	l Present? Yes 🗵 No 🗌				
Remarks:				Remarks:							
Hydric soil criteria met through indicators A11 and F3.											
Hydric soil criteria met th	rough in	dicators A11	and F3.								
Hydric soil criteria met th	rough in	dicators A11	and F3.								
Hydric soil criteria met tr	rough in	dicators A11	and F3.								
•	rough in	dicators A11	and F3.								
HYDROLOGY		dicators A11	and F3.								
HYDROLOGY Wetland Hydrology Indicato	rs:										
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum	rs:	ired; check all th	at apply)				ndary Indicators (2 or more required)				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1)	rs:	ired; check all th □ Wat	at apply) er-Stained Leav		xcept MLF		Vater-Stained Leaves (B9) (MLRA 1, 2,				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) Surface Water Table (A2)	rs:	ired; check all th ☐ Wat	at apply) er-Stained Leav 1, 2, 4A, and 4E		xcept MLF	RA 🗌 V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) Surface Water Table (A2) Saturation (A3)	rs:	i <u>red; check all th</u> ☐ Wat ☐ Salt	<u>at apply)</u> er-Stained Leav 1 <b>, 2, 4A, and 4E</b> Crust (B11)	3)	xcept MLF		Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10)				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) Surface Water Table (A2) High Water Table (A2) Saturation (A3) Water Marks (B1)	rs:	i <u>red; check all th</u> ☐ Wat ☐ Salt ☐ Aqu	at apply) er-Stained Leav 1, 2, 4A, and 4E Crust (B11) atic Invertebrate	<b>3)</b> es (B13)	xcept MLF		Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Orainage Patterns (B10) Ory-Season Water Table (C2)				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	rs:	i <u>red; check all th</u> □ Wat □ Salt □ Aqu □ Hyd	<u>at apply)</u> er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O	<b>3)</b> es (B13) dor (C1)	-		Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9)				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	rs:	ired; check all th Wat Salt Aqu Hyd Oxio	<u>at apply)</u> er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe	<b>3)</b> es (B13) dor (C1) eres along	Living Roo	<b>RA</b> □ W □ D □ D □ S ts (C3) ⊠ G	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	rs:	ired; check all th Wat Salt Aqu Hyd Oxid Pres	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce	<b>3)</b> dor (C1) eres along ed Iron (C4	Living Roo	ts (C3)	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3)				
HYDROLOGY Wetland Hydrology Indicators Primary Indicators (minimum 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)	rs:	ired; check all th Wat Salt Aqu Hyd Oxid Pres Rec	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct	8) dor (C1) eres along ed Iron (C4 ion in Tilled	Living Roo ) d Soils (C6	ts (C3) ⊠ G ) ⊠ F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Prainage Patterns (B10) Pry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5)				
HYDROLOGY         Wetland Hydrology Indicators         Primary Indicators (minimum)         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)	rs: of one requ	ired; check all th Wat Salt Aqu Hyd Oxid Pres Stu	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct nted or Stressed	<b>B)</b> dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Roo ) d Soils (C6	xA □ V □ □ □ S ts (C3) X G □ S □ S □ S □ S □ S □ R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum 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 Aeri	rs: of one requ	ired; check all th Wat Salt Aqu Hyd Oxid Pres Rec Stur (B7) Oth	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct	<b>B)</b> dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Roo ) d Soils (C6	xA □ V □ □ □ S ts (C3) X G □ S □ S □ S □ S □ S □ R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Prainage Patterns (B10) Pry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5)				
HYDROLOGY         Wetland Hydrology Indicators         Primary Indicators (minimum         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 Aeri         Sparsely Vegetated Conce	rs: of one requ	ired; check all th Wat Salt Aqu Hyd Oxid Pres Rec Stur (B7) Oth	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct nted or Stressed	<b>B)</b> dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Roo ) d Soils (C6	xA □ V □ □ □ S ts (C3) X G □ S □ S □ S □ S □ S □ R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conce Field Observations:	rs: of one requ al Imagery ave Surfac	ired; check all th Wat Salt Aqu Hyd Oxid Pres Rec Stur (B7) Oth e (B8)	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct nted or Stressed er (Explain in Re	B) dor (C1) eres along ed Iron (C4 ion in Tilleo I Plants (D emarks)	Living Roo ) d Soils (C6	xA □ V □ □ □ S ts (C3) X G □ S □ S □ S □ S □ S □ R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conc Field Observations: Surface Water Present?	rs: <u>of one requ</u> al Imagery ave Surfac Yes	ired; check all th Wat Salt Aqu Hyd Oxid Oxid Pree Rec Stur (B7) Oth e (B8)	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct nted or Stressed er (Explain in Re (inches): <u>None</u>	B) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo ) d Soils (C6	xA □ V □ □ □ S ts (C3) X G □ S □ S □ S □ S □ S □ R	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conce Field Observations:	rs: of one requ al Imagery ave Surfac	ired; check all th Wat Salt Salt Salt Aqu Dyres Oxio Pres Stur (B7) Oth e (B8) No X Depth No X Depth	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct nted or Stressed er (Explain in Reduct (inches): <u>None</u> (inches): <u>None</u>	B) dor (C1) eres along ed Iron (C4 loon in Tilled l Plants (D emarks)	Living Roo .) d Soils (C6 1) (L <b>RR A</b> )	xA □ V □ D □ S s(C3) ⊠ G □ S □ S □ S □ S □ F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seconorphic Position (D2) Seconorphic Position (D2) Scenary (C9) Seconorphic Position (D2) Seconorphic Position (D2) Sec				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conce Field Observations: Surface Water Present? Water Table Present? Saturation Present?	rs: <u>of one requ</u> al Imagery ave Surfac Yes	ired; check all th Wat Salt Salt Salt Aqu Dyres Oxio Pres Stur (B7) Oth e (B8) No X Depth No X Depth	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct nted or Stressed er (Explain in Re (inches): <u>None</u>	B) dor (C1) eres along ed Iron (C4 loon in Tilled l Plants (D emarks)	Living Roo .) d Soils (C6 1) (L <b>RR A</b> )	xA □ V □ D □ S s(C3) ⊠ G □ S □ S □ S □ S □ F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seaturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) ( <b>LRR A</b> )				
HYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum 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 Aeri Sparsely Vegetated Conce Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	rs: <u>of one requ</u> al Imagery ave Surfac Yes Yes Yes Yes	ired; check all th □ Wat □ Salt □ Aqu □ Hyd □ Oxia □ Pres □ Stur (B7) □ Oth e (B8) No ⊠ Depth No ⊠ Depth No ⊠ Depth	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct inted or Stressed er (Explain in Reduct (inches): <u>None</u> (inches): <u>None</u>	B) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo ) d Soils (C6 1) (LRR A)	A □ W □ D □ S □ S ■ S ○ S ○ S ○ S ○ F □ F	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seconorphic Position (D2) Seconorphic Position (D2) Scenary (C9) Seconorphic Position (D2) Seconorphic Position (D2) Sec				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) Kigh 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 Aeri Sparsely Vegetated Conce Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (streed)	al Imagery ave Surfac Yes Yes Yes Yes am gauge,	ired; check all th □ Wat □ Salt □ Aqu □ Hyd □ Oxid □ Pres □ Stur (B7) □ Oth e (B8) No ⊠ Depth No ⊠ Depth No ⊠ Depth No ⊠ Depth monitoring well,	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct thed or Stressed ent Iron Reduct (inches): <u>None</u> (inches): <u>None</u> (inches): <u>None</u>	as (B13) dor (C1) eres along ed Iron (C4 ion in Tilleo I Plants (D emarks) e e e e e e e e e e e e e e revious ins	Living Roo ) d Soils (C6 1) (LRR A) Wetl spections),	KA       Image: Weight of the second se	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Schallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)				
HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) Kigh 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 Aeri Sparsely Vegetated Conce Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (streed)	al Imagery ave Surfac Yes Yes Yes Yes am gauge,	ired; check all th □ Wat □ Salt □ Aqu □ Hyd □ Oxid □ Pres □ Stur (B7) □ Oth e (B8) No ⊠ Depth No ⊠ Depth No ⊠ Depth No ⊠ Depth monitoring well,	at apply) er-Stained Leav <b>1, 2, 4A, and 4E</b> Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct thed or Stressed ent Iron Reduct (inches): <u>None</u> (inches): <u>None</u> (inches): <u>None</u>	as (B13) dor (C1) eres along ed Iron (C4 ion in Tilleo I Plants (D emarks) e e e e e e e e e e e e e e revious ins	Living Roo ) d Soils (C6 1) (LRR A) Wetl spections),	KA       Image: Weight of the second se	Vater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Seconorphic Position (D2) Seconorphic Position (D2) Scenary (C9) Seconorphic Position (D2) Seconorphic Position (D2) Sec				

indicates that this area supports high groundwater for 2+ consecutive weeks, meeting primary indicators A2 and A3.

Project/Site: 1244.0001 Jackson Highway	City/County: Che	ehalis / Lewis	Sampling Date: <u>6/26/19</u>
Applicant/Owner: Puget Western, Inc.		State: WA	Sampling Point: DP-116
Investigator(s): Kyla Caddey	Sectio	n, Township, Range: <u>11 / 1</u>	13N / 02W
Landform (hillslope, terrace, etc.): Valley Floor			ave Slope (%): 2
Subregion (LRR): A2			
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent	slopes	NWI classif	ication: N/A
Are climatic / hydrologic conditions on the site typical for this tim		🗴 (If no, explain in Remark	
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Ar	e "Normal Circumstances" p	resent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If ı	needed, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map sho	owing sampling poi	nt locations, transec	ts, important features, etc.
Hydrophytic Vegetation Present?       Yes X       No □         Hydric Soil Present?       Yes X       No □         Wetland Hydrology Present?       Yes X       No □	Is the Sam within a W	•	No 🗌

Remarks: All three wetland criteria met. Data collected in Wetland L. Precipitation was slightly below average at 58 percent of normal.

	Absolute			Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	<u>% Cover</u>	Species?	Status	Number of Dominant Species	
				That Are OBL, FACW, or FAC: $3$ (a)	A)
2				Total Number of Dominant	
3				Species Across All Strata: <u>3</u> (E	3)
4				Percent of Dominant Species	
	0	= Total C	over		ч/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	F	Vee			
1. Fraxinus latifolia		Yes	FACW	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	5	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Ranunculus repens	40	Yes	FAC	Column Totals: (A)	
2. Alopecurus aequalis	35	Yes	OBL		( )
3. Hypochaeris radicata	10	No	FACU	Prevalence Index = B/A =	
4. Phalaris arundinacea	5	No	FACW	Hydrophytic Vegetation Indicators:	
5. Galium trifidum	5	No	FACW	Rapid Test for Hydrophytic Vegetation	
6. Carex leporina	5	No	FACW	➤ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide supportin data in Remarks or on a separate sheet)	ıg
9				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	1
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology mu	ust
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.	
1				Undersuchation	
2				Hydrophytic Vegetation	
	0	= Total C	over	Present? Yes 🗵 No 🗌	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria met thro	ough the	dominand	ce test.		

Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth	Matrix			x Features								
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur		Remarks			
0 - 2	10YR 3/2	100	-				SiLo	:	Silt loam			
2 - 7	10YR 3/2	98	7.5YR 4/6	2	С	PL,M	SiLo		Silt loam			
7 - 10	10YR 3/2	93	7.5YR 4/6	7	С	PL,M	SiLo		Silt loam			
10 - 16	10YR 4/1	90	7.5YR 4/6	10	С	PL,M	SiLo	:	Silt Ioam			
·		<u> </u>										
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.												
Hydric Soil I	ndicators: (Applic	able to all	LRRs, unless othe	rwise note	ed.)		In	dicators	s for Problematic Hydric Soils <sup>3</sup> :			
Histosol (	· /		Sandy Redox (S	-					/luck (A10)			
	ipedon (A2)		Stripped Matrix	. ,					arent Material (TF2)			
Black His			Loamy Mucky M			MLRA 1)			Shallow Dark Surface (TF12)			
	n Sulfide (A4)	( ) ] ]	Loamy Gleyed N					Other	(Explain in Remarks)			
	Below Dark Surface	e (A11)	Depleted Matrix				31					
	rk Surface (A12) ucky Mineral (S1)		Redox Dark Sur	. ,	7)		٩r		of hydrophytic vegetation and hydrology must be present,			
•	leyed Matrix (S4)		Redox Depressi	(	()				disturbed or problematic.			
	ayer (if present):							unicoo				
Type: No												
	ches): N/A						Hydri	c Soil P	resent? Yes 🗵 No 🗌			
Remarks:	/						nyun	C 3011 P				
Hydric soil	criteria met throi	ugn indic	cators A11, F3, a	nd F6.								
HYDROLO	GY											
Wetland Hyd	drology Indicators:											
Primary Indic	ators (minimum of o	ne require	d; check all that appl	y)				Second	ary Indicators (2 or more required)			
Surface V	Vater (A1)		🗌 Water-Stai	ned Leave	s (B9) ( <b>e</b>	xcept MLF	RA	□ Wat	er-Stained Leaves (B9) (MLRA 1, 2,			
🗴 High Wat	ter Table (A2)		1, 2, 4/	A, and 4B)				4	4A, and 4B)			
🗴 Saturatio	n (A3)		Salt Crust	(B11)				🗌 Drai	inage Patterns (B10)			
Water Ma	arks (B1)		Aquatic Inv	vertebrates	s (B13)			Dry-	-Season Water Table (C2)			
Sediment	t Deposits (B2)		Hydrogen 3	Sulfide Od	or (C1)			🗌 Satu	uration Visible on Aerial Imagery (C9)			
Drift Dep	osits (B3)		Oxidized R	hizosphere	es along	Living Roo	ots (C3)	🗙 Geo	pmorphic Position (D2)			
Algal Mat	t or Crust (B4)		Presence of	of Reduced	d Iron (C4	)		🗌 Sha	llow Aquitard (D3)			
Iron Depo	osits (B5)		Recent Iro	n Reductio	n in Tille	d Soils (C6	i)	¥ FAC	C-Neutral Test (D5)			
Surface S	Soil Cracks (B6)		Stunted or	Stressed I	Plants (D	1) ( <b>LRR A</b> )	)	🗌 Rais	sed Ant Mounds (D6) ( <b>LRR A</b> )			
🗌 Inundatio	n Visible on Aerial Ir	nagery (B	7) 🗌 Other (Exp	lain in Rer	narks)			Fros	st-Heave Hummocks (D7)			
Sparsely	Vegetated Concave	Surface (	B8)									
Field Observ	vations:											
Surface Wate	er Present? Y	es 🗌 No	o 🗴 Depth (inches	<sub>s):</sub> None								
Water Table	Present? Y	es 🗌 No	Depth (inches									
Saturation Pr			o 🗵 Depth (inches			Wetl	and Hvd	Iroloav I	Present? Yes 🗵 No 🗌			
(includes cap	oillary fringe)			•								
			onitoring well, aerial									
	imity to Monitori	ng Well	(MP-23) which su	upports 3	3 conse	cutive w	eeks of	f high g	roundwater table.			
Remarks:												
									onal hydrology monitoring			
indicates th	nat this area sup	ports hiç	gh groundwater fo	or 2+ cor	nsecutiv	/e weeks	s, meet	ing prir	mary indicators A2 and A3.			

Project/Site: 1244.0001 Jackson High	way	City/County:	Chehalis / Lewis	S	Sampling Date: <u>6/26/19</u>
Applicant/Owner: Puget Western, Inc.			State: \	NA s	Sampling Point: DP-117
Investigator(s): Kyla Caddey		S	Section, Township, Rar	nge: <u>11 / 13N</u>	/ 02W
Landform (hillslope, terrace, etc.): Valley F	loor				Slope (%): <u>2</u>
					Datum: WGS-84
Soil Map Unit Name: Lacamas silt loam	, 0 to 3 percent slo	pes		NWI classificatio	<sub>n:</sub> <u>N</u> /A
Are climatic / hydrologic conditions on the sit	e typical for this time of	year? Yes 🗌			
Are Vegetation, Soil, or Hydrol	ogy significantly	disturbed?	Are "Normal Circum	stances" preser	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrol	ogy naturally pro	blematic?	(If needed, explain a	iny answers in R	Remarks.)
SUMMARY OF FINDINGS – Attac	h site map showin	ng sampling	point locations,	transects, ir	mportant features, etc.
Hydric Soil Present? Y	Yes □ No X Yes X No □ Yes □ No X		Sampled Area n a Wetland?	Yes 🗌 No [	X
Remarks:					

Not all three wetland criteria met, only hydric soil. Upland plot between Wetlands L and M. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2		·		Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>30 ft)</u>	0	= Total C	over	That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Hypochaeris radicata	35	Yes	FACU	Column Totals: (A) (B)
2. Anthoxanthum odoratum	20	Yes	FACU	
3. Holcus lanatus	20	Yes	FAC	Prevalence Index = B/A =
4. Lotus corniculatus	15	No	FAC	Hydrophytic Vegetation Indicators:
<sub>5.</sub> Juncus effusus	10	No	FACW	Rapid Test for Hydrophytic Vegetation
6				Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
_	0	= Total C	over	Present? Yes No 🗵
% Bare Ground in Herb Stratum 0				
Remarks: No hydrophytic vegetation criteria met; hydrology.	prevalen	ice index	not warra	anted due to lack of combined hydric soil and

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix			Redox	k Features	;				
(inches)	Color (moist)	%	Co	lor (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e	Remarks
0 - 4	10YR 3/2	100	-		-	-	-	SiLo		Silt Loam
4 - 12	10YR 3/2	98	7.	5YR 4/6	2	С	PL,M	SiLo		Silt loam
12 - 16	10YR 4/1	93	7.	5YR 4/6	7	С	PL,M	SiLo		Silt loam
					·					
					·					
					·					
					·		·		<u> </u>	
	oncentration, D=De						ed Sand Gr			ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	cable to	all LR	Rs, unless other	wise note	ed.)		In	dicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	· · /			Sandy Redox (S	-					Muck (A10)
	ipedon (A2)			Stripped Matrix (						Parent Material (TF2)
Black His				Loamy Mucky M		) (except	MLRA 1)		-	Shallow Dark Surface (TF12)
_ , 0	n Sulfide (A4)			Loamy Gleyed N					] Othe	r (Explain in Remarks)
	Below Dark Surfa	ce (A11)		Depleted Matrix				2.		
	rk Surface (A12)		Ц	Redox Dark Sur	. ,			lle		rs of hydrophytic vegetation and
	ucky Mineral (S1)		님	Depleted Dark S		()				nd hydrology must be present,
	leyed Matrix (S4) Layer (if present):			Redox Depressi	ons (F8)			1	unies	s disturbed or problematic.
Type: NO	• • • •									
	<sub>ches):</sub> N/A			_						
	lies). <u></u>			_				Hydri	ic Soil	Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met thr	ough in	dicato	or A11.						
HYDROLO	GY									
Wetland Hy	drology Indicators	5:								
	cators (minimum of		ired; cl	heck all that apply	()				Secon	ndary Indicators (2 or more required)
Surface V				☐ Water-Stair		s (B9) ( <b>e</b>	xcept MLF	RA .		ater-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,
	ter Table (A2)				, and 4B)					4A, and 4B)
□ Saturatio				□ Salt Crust (	· ·					rainage Patterns (B10)
Water Ma	( )			Aquatic Inv	,	(B13)				y-Season Water Table (C2)
	t Deposits (B2)			Hydrogen S		. ,				aturation Visible on Aerial Imagery (C9)
	osits (B3)			Oxidized Ri			Living Roo	te (C3)		eomorphic Position (D2)
	t or Crust (B4)			Presence o		-	-	13 (00)		nallow Aquitard (D3)
-	osits (B5)			Recent Iror		•	,	`		AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or				,		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aerial	Imagony	(P7)	Other (Expl		•				ost-Heave Hummocks (D7)
	Vegetated Concav		• •			liaiks)				USE-Heave Hummocks (D7)
Field Obser	-	ounac	с (БО)							
Surface Wate		Yes 🗌	No 🗙	Depth (inches	None					
		_								
Water Table		Yes	No 🗵		,		14/-41			
Saturation P (includes cap	oillary fringe)	Yes 🗌	No 🗙					-		y Present? Yes 🗌 No 🗵
	corded Data (strea	m gauge	monito	oring well, aerial p	hotos, pre	evious ins	spections),	if availa	ble:	
Remarks:										
No wetland	d hydrology crit	eria me	t.							

Project/Site: 1244.0001 Jackson Highway	City/County: Cheh	nalis / Lewis	_ Sampling Date: <u>6/26/19</u>
Applicant/Owner: Puget Western, Inc.		State: WA	_ Sampling Point: DP-118
Investigator(s): Kyla Caddey	Section,	, Township, Range: <u>11 / 1</u> 3	3N / 02W
Landform (hillslope, terrace, etc.): Valley Floor			ave Slope (%): 2
Subregion (LRR): A2			
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent	t slopes	NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for this tin		(If no, explain in Remarks.	
Are Vegetation, Soil, or Hydrology signific	antly disturbed? Are	"Normal Circumstances" pre	esent? Yes 🗌 No 🗵
Are Vegetation, Soil, or Hydrology naturall	y problematic? (If ne	eded, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site map she	owing sampling poin	t locations, transects	s, important features, etc.
Hydrophytic Vegetation Present?       Yes ⋈ No □         Hydric Soil Present?       Yes ⋈ No □         Wetland Hydrology Present?       Yes ⋈ No □	Is the Sampl within a Wet		No 🗌

Remarks: All three wetland criteria met. Data collected in Wetland M. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	-
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 2 (A)	)
2				Tatal Newsham of Damin and	
3.				Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
		·		$\frac{2}{D}$	
4		T-t-LC		Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/E	3)
				Prevalence Index worksheet:	
1				Total % Cover of:Multiply by:	
2					
3		·		OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Ranunculus repens	30	Yes	FAC	Column Totals: (A) (E	3)
2. Alopecurus aequalis	20	Yes	OBL		- /
3. Digitalis purpurea	15	No	FACU	Prevalence Index = B/A =	
4. Alisma gramineum	10	No	OBL	Hydrophytic Vegetation Indicators:	
5. Juncus effusus	10	No	FACW	Rapid Test for Hydrophytic Vegetation	
6. Schedonorus arundinaceus	5	No	FAC	☑ Dominance Test is >50%	
7. Galium trifidum	5	No	FACW	□ Prevalence Index is ≤3.0 <sup>1</sup>	
8. Hypochaeris radicata	5	No	FACU	Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
9				□ Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11	<u> </u>				
	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	•
Woody Vine Stratum (Plot size: <u>30 ft</u> )					
1				Ukralma mikratia	
2				Hydrophytic Vegetation	
	0	= Total C	over	Present? Yes X No	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met th					

Profile Desc	ription: (Describ	e to the de	oth needed to docu	ment the i	ndicator	or confirm	n the abse	ence of indicators.)
Depth	Matrix			ox Feature	<u>s</u>			
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	
0 - 4	10YR 3/1	99	7.5YR 4/6	1	С	PL,M	SiLo	Silt Loam
4 - 10	10YR 3/1	90	7.5YR 4/6	10	С	PL,M	SiLo	Silt loam
10 - 16	10YR 4/1	90	7.5YR 4/6	10	С	PL,M	SiLo	Silt loam
					·			
					·			
					·			·
			Reduced Matrix, C			ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
		icable to al	LRRs, unless othe		ed.)			icators for Problematic Hydric Soils <sup>3</sup> :
	· /		Sandy Redox (	-				2 cm Muck (A10)
Black His	ipedon (A2)		<ul> <li>Stripped Matrix</li> <li>Loamy Mucky I</li> </ul>	. ,	) (oxcont			Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed	-				Other (Explain in Remarks)
	Below Dark Surfa	ce (A11)	Depleted Matrix		/			
•	rk Surface (A12)	( )	Redox Dark Su				<sup>3</sup> Inc	licators of hydrophytic vegetation and
Sandy M	ucky Mineral (S1)		Depleted Dark	Surface (F	7)			wetland hydrology must be present,
•	leyed Matrix (S4)		Redox Depress	sions (F8)			I	unless disturbed or problematic.
	ayer (if present):							
Type: No								
Depth (ind	ches): <u>N/A</u>						Hydric	Soil Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	criteria met thr	ough indi	cators A11, F3, a	and F6.				
HYDROLO	GY							
	drology Indicators	s:						
-			ed; check all that app	lv)			ç	Secondary Indicators (2 or more required)
	Water (A1)		Water-Sta		e (B0) (e	vcont MI P		Water-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)			A, and 4B)				4A, and 4B)
Saturatio			□ Salt Crust	•	,		Г	Drainage Patterns (B10)
Water Ma	( )		Aquatic In	. ,	s (B13)			Dry-Season Water Table (C2)
	t Deposits (B2)			Sulfide Od	. ,		с Г	Saturation Visible on Aerial Imagery (C9)
	osits (B3)					Living Root	ts (C3)	Geomorphic Position (D2)
	t or Crust (B4)			of Reduce	-	-	ы (00) Ц Г	Shallow Aquitard (D3)
	osits (B5)					d Soils (C6)	) [	✓ FAC-Neutral Test (D5)
	Soil Cracks (B6)					1) ( <b>LRR A</b> )		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery (B		olain in Rei		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-	Frost-Heave Hummocks (D7)
	Vegetated Concar				,			
Field Obser	-							
Surface Wat	er Present?	Yes 🗌 🛛 N	o 🔀 🛛 Depth (inche	<sub>s):</sub> None				
Water Table	Present?	Yes 🗌 🛛 N	o 🗵 Depth (inche					
Saturation P			o 🗵 Depth (inche			Wetla	and Hvdr	ology Present? Yes 🗵 No 🗌
(includes cap	oillary fringe)			•				
Describe Re	corded Data (strea	m gauge, m	onitoring well, aerial	photos, pr	evious ins	spections),	if availabl	e:
Remarks:								
Hydrology	criteria met thr	ough sec	ondary indicators	s D2 and	D5.			

Project/Site: <u>1244.0001 Jackson Highway</u>	City/0	County: Chehalis / Le	wis	Sampling Date: 6/26/19
Applicant/Owner: Puget Western, Inc.		Sta	<sub>ite:</sub> WA	Sampling Point: DP-119
Investigator(s): Ryan Krapp		Section, Township	, Range: <u>11 / 13</u>	N / 02W
Landform (hillslope, terrace, etc.): Valley Floor				K Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u>				
Soil Map Unit Name: Lacamas silt loam, 0 to				
Are climatic / hydrologic conditions on the site typic			plain in Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly disturbe	d? Are "Normal C	ircumstances" pres	sent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic	? (If needed, expl	ain any answers ir	n Remarks.)
SUMMARY OF FINDINGS – Attach site	e map showing san	npling point locatio	ons, transects,	, important features, etc.
Hydrophytic Vegetation Present?       Yes □         Hydric Soil Present?       Yes ⊠         Wetland Hydrology Present?       Yes □	No 🗌	Is the Sampled Area within a Wetland?	Yes 🗌 N	lo 🗵
Remarks: Not all three wetland criteria met, on average at 58 percent of normal.	ly hydric soils. Data colle	ected between Wetlands	M and N. Precip	itation was slightly below
	6 I			

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)		Species?		Number of Dominant Species	
1					(A)
1					(/ (/
2				Total Number of Dominant	
3				Species Across All Strata: <u>1</u>	(B)
4				Percent of Dominant Species	
	0	= Total C		That Are OBL, FACW, or FAC: 0%	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					(,,,,,)
1				Prevalence Index worksheet:	
2				Total % Cover of:Multip	ly by:
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
···	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: 10 ft)	<u> </u>	- 10(a) C		UPL species x 5 =	
1 Hypochaeris radicata	95	Yes	FACU		
2. Juncus effusus	5	No	FACW	Column Totals: (A)	(B)
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
				Rapid Test for Hydrophytic Vegetation	n
5				☐ Dominance Test is >50%	
6				$\square$ Prevalence Index is $\leq 3.0^{1}$	
7				Morphological Adaptations <sup>1</sup> (Provide	supporting
8				data in Remarks or on a separate	
9				Wetland Non-Vascular Plants <sup>1</sup>	-
10		·		Problematic Hydrophytic Vegetation <sup>1</sup>	(Explain)
11				<sup>1</sup> Indicators of hydric soil and wetland hydric	Irology must
$M_{\rm exc} = 0.04$	100	= Total C	Cover	be present, unless disturbed or problema	
Woody Vine Stratum (Plot size: <u>30 ft</u> )					
1				Hydrophytic	
2				Vegetation	
	0	= Total C	Cover	Present? Yes 🗌 No 🗵	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria not me	t: nrevale	nce inde	x not war	ranted due to lack of combined by	tric soil and

Hydrophytic vegetation criteria not met; prevalence index not warranted due to lack of combined hydric soil hydrology.

Profile Descript	tion: (Describe	to the o	depth ne	eded to docum	nent the in	ndicator	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)					
Depth	Matrix			Redox	K Features							
	olor (moist)	%	Colc	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	<u> </u>	Remarks		
0-6 10	0YR 3/2	100					-	SiLo		Silt loam		
6-9 10	0YR 3/2	99	7.5	YR 4/6	1	С	PL,M	SiLo		Silt loam		
9 - 12 10	0YR 3/2	95	7.5	YR 4/6	5	С	PL,M	SiLo		Silt loam		
12 - 16 10	0YR 4/1	90	7.5	YR 4/6	10	С	PL,M	SiLo		Silt loam		
							·				·	
<u> </u>		·					·				·	
							. <u></u>					
	entration, D=Dep						ed Sand Gr			ation: PL=Pore Lining, M=Ma		
	icators: (Applic	able to				ed.)				s for Problematic Hydric So	oils <sup>3</sup> :	
Histosol (A1)	,			Sandy Redox (S	-					Muck (A10)		
Histic Epipeo				Stripped Matrix (	· ·	(		_		Parent Material (TF2)		
Black Histic				Loamy Mucky M		(except	MILRA 1)		•	Shallow Dark Surface (TF12) (Explain in Remarks)		
_ , 0	elow Dark Surface	A11) م		Loamy Gleyed N Depleted Matrix					Other	(Explain in Remarks)		
— ·	Surface (A12)	= (ATT)		Redox Dark Surf				<sup>3</sup> In	dicator	s of hydrophytic vegetation a	hd	
	ky Mineral (S1)			Depleted Dark S	. ,	7)				d hydrology must be present,		
-	ed Matrix (S4)			Redox Depression	•	,				disturbed or problematic.		
Restrictive Lay				-						-		
Type: None				-								
Depth (inches): N/A Hydric Soil Present? Yes 🗵 No 🗌												
Remarks:								1				
Hydric soil criteria met through indicators A11.												
HYVIIC SOIL CI	teria met thro	ugh in	dicator	's A11.								
Hyunc soli cri	tena met thro	ugh in	dicator	rs A11.								
myane soli eri	itena met thro	ugh in	dicator	rs A11.								
		ugh in	dicator	s A11.								
HYDROLOGY	(			's A11.								
HYDROLOGY Wetland Hydrol	/ logy Indicators:				)				Secon	tary Indicators (2 or more rec	uired)	
HYDROLOGY Wetland Hydrol Primary Indicato	f logy Indicators: brs (minimum of c			eck all that apply		s (BQ) ( <b>a</b>	vcont MI R			dary Indicators (2 or more reg	<u> </u>	
HYDROLOGY Wetland Hydrol Primary Indicato	f logy Indicators: ors (minimum of c ter (A1)			eck all that apply □ Water-Stair	ned Leave		xcept MLR			ter-Stained Leaves (B9) ( <b>ML</b>	<u> </u>	
HYDROLOGY Wetland Hydrol Primary Indicato	f logy Indicators: ors (minimum of c ter (A1) Table (A2)			eck all that apply ☐ Water-Stair 1, 2, 4A	ned Leave , <b>and 4B)</b>		xcept MLR		🗌 Wa	ter-Stained Leaves (B9) (ML 4A, and 4B)	<u> </u>	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3)			eck all that apply ☐ Water-Stair 1, 2, 4A ☐ Salt Crust (	ned Leave ., <b>and 4B)</b> B11)	. , .	xcept MLR	A	🗌 Wa	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> iinage Patterns (B10)	<u> </u>	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1)			eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo	ned Leave ,, <b>and 4B)</b> B11) ertebrates	(B13)	xcept MLR	A	U Wa	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> ainage Patterns (B10) <i>-</i> Season Water Table (C2)	RA 1, 2,	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2)			eck all that apply ☐ Water-Stair <b>1, 2, 4A</b> ☐ Salt Crust ( ☐ Aquatic Inve ☐ Hydrogen S	ned Leave , <b>and 4B)</b> B11) ertebrates Sulfide Od	(B13) or (C1)	-	A	Ura	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> ainage Patterns (B10) A-Season Water Table (C2) auration Visible on Aerial Imag	RA 1, 2,	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3)			eck all that apply U Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized RI	ned Leave , <b>and 4B)</b> B11) ertebrates Sulfide Od nizosphere	(B13) or (C1) es along	Living Root	A	URA	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2)	RA 1, 2,	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) • Crust (B4)			eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized Ri Presence o	ned Leave , <b>and 4B)</b> B11) ertebrates Sulfide Od nizosphere f Reduced	(B13) or (C1) es along I Iron (C4	Living Root	<b>RA</b> ts (C3)	Ura Dra Dry Sat Ge Sha	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3)	RA 1, 2,	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or I Iron Deposit	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) • Crust (B4) ts (B5)			eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized Ri Presence o Recent Iron	ned Leave , <b>and 4B)</b> B11) ertebrates Sulfide Od nizosphere f Reduced i Reduced	(B13) or (C1) es along I Iron (C4 n in Tilled	Living Root	<b>RA</b> ts (C3)	Wa Ury Ury Sat Ge Sat FA	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) -Season Water Table (C2) turation Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) • Crust (B4) ts (B5) I Cracks (B6)	one requ	iired; ch	eck all that apply Water-Stair <b>1, 2, 4A</b> Salt Crust ( Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S	ned Leave , <b>and 4B)</b> B11) ertebrates Sulfide Od nizosphere f Reduced i Reduced Stressed F	(B13) or (C1) es along I Iron (C4 n in Tilleo Plants (D	Living Root	<b>RA</b> ts (C3)	Wa     Dra     Dra     Dry     Sai     Ge     Sh:     FA     Ra	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) <i>c</i> -Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR</b> <i>J</i>	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) c Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In	ne requ	ired; ch	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized Ri Presence o Recent Iron	ned Leave , <b>and 4B)</b> B11) ertebrates Sulfide Od nizosphere f Reduced i Reduced Stressed F	(B13) or (C1) es along I Iron (C4 n in Tilleo Plants (D	Living Root	<b>RA</b> ts (C3)	Wa     Dra     Dra     Dry     Sai     Ge     Sh:     FA     Ra	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) -Season Water Table (C2) turation Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Veter	( logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) • Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In- getated Concave	ne requ	ired; ch	eck all that apply Water-Stair <b>1, 2, 4A</b> Salt Crust ( Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S	ned Leave , <b>and 4B)</b> B11) ertebrates Sulfide Od nizosphere f Reduced i Reduced Stressed F	(B13) or (C1) es along I Iron (C4 n in Tilleo Plants (D	Living Root	<b>RA</b> ts (C3)	Wa     Dra     Dra     Dry     Sai     Ge     Sh:     FA     Ra	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) <i>c</i> -Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR</b> <i>J</i>	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vet Field Observati	( logy Indicators: prs (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) c Crust (B4) is (B5) l Cracks (B6) /isible on Aerial In getated Concave ions:	magery	ired; ch (B7) e (B8)	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized Ri Presence o Recent Iron Stunted or S Other (Expl	ned Leave a, <b>and 4B)</b> B11) ertebrates Gulfide Od nizosphere f Reduced r Reductio Stressed F ain in Rer	(B13) or (C1) es along I Iron (C4 n in Tilleo Plants (D	Living Root	<b>RA</b> ts (C3)	Wa     Dra     Dra     Dry     Sai     Ge     Sh:     FA     Ra	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) <i>c</i> -Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR</b> <i>J</i>	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vee Field Observati Surface Water P	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) • Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In egetated Concave ions: Present? Y	magery Surfac	iired; chr (B7) e (B8) No ⊠	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized Rl Presence o Recent Iron Stunted or S Other (Expl	ned Leave and <b>4B)</b> B11) ertebrates Sulfide Od nizosphere f Reduced Reductio Stressed F ain in Rer ain in Rer	(B13) or (C1) es along I Iron (C4 n in Tilleo Plants (D	Living Root	<b>RA</b> ts (C3)	Wa     Dra     Dra     Dry     Sai     Ge     Sh:     FA     Ra	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) <i>c</i> -Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR</b> <i>J</i>	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Veg Field Observati Surface Water P	Iogy Indicators:         ors (minimum of c         ter (A1)         Table (A2)         A3)         s (B1)         eposits (B2)         ts (B3)         • Crust (B4)         ts (B5)         I Cracks (B6)         /isible on Aerial Ingetated Concave         ions:         Present?       Y         esent?       Y	magery Surfac	iired; chư (B7) e (B8) No ⊠ No ⊠	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized RI Oxidized RI Presence o Recent Iron Stunted or S Other (Expl Depth (inches)	ned Leave , and 4B) B11) ertebrates Sulfide Od nizosphere f Reduced n Reductio Stressed F ain in Rer ): <u>None</u> ): <u>None</u>	(B13) or (C1) es along I Iron (C4 n in Tilleo Plants (D	Living Roof ) d Soils (C6 1) (LRR A)	<b>τΑ</b> ts (C3)	Wa     Dra     Dra     Dry     Sat     Ge     Sha     FA     FA     Frc	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) r-Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) ( <b>LRR /</b> st-Heave Hummocks (D7)	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vee Field Observati Surface Water P	Iogy Indicators:         ors (minimum of c         ter (A1)         Table (A2)         A3)         s (B1)         eposits (B2)         ts (B3)         * Crust (B4)         ts (B5)         I Cracks (B6)         /isible on Aerial Ingetated Concave         ions:         Present?       Y         esent?       Y         ent?       Y	magery Surfac	iired; chr (B7) e (B8) No ⊠	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Invo Hydrogen S Oxidized Rl Presence o Recent Iron Stunted or S Other (Expl	ned Leave , and 4B) B11) ertebrates Sulfide Od nizosphere f Reduced n Reductio Stressed F ain in Rer ): <u>None</u> ): <u>None</u>	(B13) or (C1) es along I Iron (C4 n in Tilleo Plants (D	Living Roof ) d Soils (C6 1) (LRR A)	<b>τΑ</b> ts (C3)	Wa     Dra     Dra     Dry     Sat     Ge     Sha     FA     FA     Frc	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) <i>c</i> -Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR</b> <i>J</i>	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vee Field Observati Surface Water P Water Table Pre Saturation Prese (includes capilla)	Iogy Indicators:         ors (minimum of c         ter (A1)         Table (A2)         A3)         s (B1)         eposits (B2)         ts (B3)         * Crust (B4)         ts (B5)         I Cracks (B6)         /isible on Aerial Ingetated Concave         ions:         Present?       Y         esent?       Y         ent?       Y	magery Surfac	iired; chư (B7) e (B8) No ⊠ No ⊠ No ⊠	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Inve Hydrogen S Oxidized RI Oxidized RI Presence o Recent Iron Stunted or S Other (Expl Depth (inches) Depth (inches)	ned Leave , and 4B) B11) ertebrates Sulfide Od hizosphere f Reduced Reductio Stressed F ain in Rer ): <u>None</u> ): <u>None</u>	(B13) or (C1) es along I Iron (C4 n in Tillee Plants (D narks)	Living Roof ) d Soils (C6 1) (LRR A)	ts (C3) ) and Hyd	Wa     Dra     Dry     Sai     Ge     Shi     FA     FA     Frc	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) r-Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) ( <b>LRR /</b> st-Heave Hummocks (D7)	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vee Field Observati Surface Water P Water Table Pre Saturation Prese (includes capilla)	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In egetated Concave ions: Present? Y ent? Y ent? Y	magery Surfac	iired; chư (B7) e (B8) No ⊠ No ⊠ No ⊠	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Inve Hydrogen S Oxidized RI Oxidized RI Presence o Recent Iron Stunted or S Other (Expl Depth (inches) Depth (inches)	ned Leave , and 4B) B11) ertebrates Sulfide Od hizosphere f Reduced Reductio Stressed F ain in Rer ): <u>None</u> ): <u>None</u>	(B13) or (C1) es along I Iron (C4 n in Tillee Plants (D narks)	Living Roof ) d Soils (C6 1) (LRR A)	ts (C3) ) and Hyd	Wa     Dra     Dry     Sai     Ge     Shi     FA     FA     Frc	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) r-Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) ( <b>LRR /</b> st-Heave Hummocks (D7)	<b>RA 1, 2,</b> gery (C9)	
HYDROLOGY Wetland Hydrol Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vee Field Observati Surface Water P Water Table Pre Saturation Prese (includes capilla)	f logy Indicators: ors (minimum of c ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In egetated Concave ions: Present? Y ent? Y ent? Y	magery Surfac	iired; chư (B7) e (B8) No ⊠ No ⊠ No ⊠	eck all that apply Water-Stair 1, 2, 4A Salt Crust ( Aquatic Inve Hydrogen S Oxidized RI Oxidized RI Presence o Recent Iron Stunted or S Other (Expl Depth (inches) Depth (inches)	ned Leave , and 4B) B11) ertebrates Sulfide Od hizosphere f Reduced Reductio Stressed F ain in Rer ): <u>None</u> ): <u>None</u>	(B13) or (C1) es along I Iron (C4 n in Tillee Plants (D narks)	Living Roof ) d Soils (C6 1) (LRR A)	ts (C3) ) and Hyd	Wa     Dra     Dry     Sai     Ge     Shi     FA     FA     Frc	ter-Stained Leaves (B9) ( <b>ML</b> <b>4A, and 4B)</b> inage Patterns (B10) r-Season Water Table (C2) uration Visible on Aerial Imag omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) ( <b>LRR /</b> st-Heave Hummocks (D7)	<b>RA 1, 2,</b> gery (C9)	

Project/Site: 1244.0001 Jackson Highway	City/County:	Chehalis / Lewis	Samp	oling Date: 7/11/19
Applicant/Owner: Puget Western, Inc.		State: WA	Samp	oling Point: DP- 120
Investigator(s): Kyla Caddey	s	Section, Township, Range:	11 / 13N / 02	2W
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none):		
Subregion (LRR): <u>A2</u> L				
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent	slopes	NWI	classification: F	PEM1A
Are climatic / hydrologic conditions on the site typical for this tim	ne of year? Yes 🗌			
Are Vegetation, Soil, or Hydrology significa	antly disturbed?	Are "Normal Circumstar	nces" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally	y problematic?	(If needed, explain any a	inswers in Rema	arks.)
SUMMARY OF FINDINGS – Attach site map sho	owing sampling	point locations, tra	nsects, impo	ortant features, etc.
Hydrophytic Vegetation Present?       Yes X       No □         Hydric Soil Present?       Yes X       No □         Wetland Hydrology Present?       Yes X       No □		Sampled Area	ïes 🕱 No 🗌	
Remarks:				

All three wetland criteria met. Data collected in Wetland M. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	)
2				Total Number of Dominant	
3				Species Across All Strata: <u>3</u> (B)	
4				Percent of Dominant Species	
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>67%</u> (A/E	B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Hypochaeris radicata	25	Yes	FACU	Column Totals: (A) (B	B)
2. Ranunculus repens	20	Yes	FAC		
3. Alisma gramineum	15	Yes	OBL	Prevalence Index = B/A =	
4. Phalaris arundinacea	10	No	FACW	Hydrophytic Vegetation Indicators:	
5. Alopecurus aequalis	10	No	OBL	Rapid Test for Hydrophytic Vegetation	
<sub>6.</sub> Epilobium ciliatum	10	No	FACW	➤ Dominance Test is >50%	
7. Juncus effusus	5	No	FACW	☐ Prevalence Index is ≤3.0 <sup>1</sup>	
8. Lotus corniculatus	5	No	FAC	Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
9				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11	100	<u> </u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must	t
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.	
1					
2				Hydrophytic	
£	0	= Total C		Vegetation Present? Yes X No	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ouah the o	dominan	ce test.		

Profile Desc	ription: (Describ	e to the d	epth ne	eded to docur	nent the i	ndicator	or confirm	the ab	sence of indicators.)
Depth	Matrix			Redo	x Feature	<u>s</u>			
(inches)	Color (moist)	%	<u>Colc</u>	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	
0 - 3	10YR 3/1	100	-		-			SiLo	Silt loam
3 - 10	10YR 3/1	97	7.5	YR 4/6	3	С	PL,M	SiLo	Silt loam
10 - 16	10YR 4/1	90	7.5	YR 4/6	10	С	PL,M	SiLo	Silt loam
						·			
						·			
<sup>1</sup> Type: C=C	oncentration, D=De	epletion R	M=Red	uced Matrix CS	S=Covered	d or Coate	d Sand Gr	ains	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Appl								dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol				Sandy Redox (S					2 cm Muck (A10)
	ipedon (A2)			Stripped Matrix					
Black His	. ,			Loamy Mucky M	lineral (F1	) (except	MLRA 1)		] Very Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamy Gleyed N		)			] Other (Explain in Remarks)
	Below Dark Surfa	ce (A11)		Depleted Matrix				2.	
	rk Surface (A12)			Redox Dark Sur	. ,	7)		°li	ndicators of hydrophytic vegetation and
-	ucky Mineral (S1) leyed Matrix (S4)			Depleted Dark S Redox Depressi		/)			wetland hydrology must be present, unless disturbed or problematic.
	Layer (if present):			COOX Depiessi					
Type: NO				_					
Depth (ind	<sub>ches):</sub> N/A							Hvdr	ic Soil Present? Yes 🗵 No 🗌
Remarks:									
	criteria met thr	ough inc	licator	ο Δ11 F3 ο	nd F6				
Tryunc 301	chiena met un	ouginine	icator	3 ATT, 1 3, a	nu i o.				
HYDROLO									
-	drology Indicator								
	cators (minimum of	one requi	red; ch	eck all that appl	y)				Secondary Indicators (2 or more required)
Surface \	( )			Water-Stai			ccept MLR	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
•	ter Table (A2)				A, and 4B	)			4A, and 4B)
Saturatio				Salt Crust					Drainage Patterns (B10)
Water Ma	. ,			Aquatic Inv		. ,			Dry-Season Water Table (C2)
	t Deposits (B2)			Hydrogen S					Saturation Visible on Aerial Imagery (C9)
	osits (B3)					-	-	ts (C3)	Seconorphic Position (D2)
	t or Crust (B4)			Presence of		-	-		Shallow Aquitard (D3)
	osits (B5)			Recent Iron				,	FAC-Neutral Test (D5)
_	Soil Cracks (B6)	Imagany	7	Stunted or			1) ( <b>LRR A</b> )		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria Vegetated Conca			Other (Exp		narks)			Frost-Heave Hummocks (D7)
Field Obser		ve Sunace	(DO)						
i leiu Observ			No 🗙	Depth (inches	. None				
Surface Wet	or Procont?			Deput (incries					
Surface Wate				Denth (inches	None				
Water Table	Present?	Yes 🗌	No 🗙	Depth (inches	,		10/04/	and Live	Irology Present? Ves 🔽 No 🗆
Water Table Saturation Pr	Present? resent?	Yes 🗌		Depth (inches Depth (inches	,		Wetla	and Hyd	Irology Present? Yes 🗵 No 🗌
Water Table Saturation Pr (includes cap	Present? resent?	Yes 🗌 Yes 🗌	No 🗙 No 🔀	Depth (inches	): None	evious ins		-	
Water Table Saturation Pr (includes cap	Present? resent? billary fringe)	Yes 🗌 Yes 🗌	No 🗙 No 🔀	Depth (inches	): None	evious ins		-	

Wetland hydrology criteria met through secondary indicators D2 and D5. Consideration of sub-dominants required for FAC-Neutral determination.

Project/Site: 1244.0001 Jackson Highway	(	City/Coun	<sub>ty:</sub> Chehal	is / Lewis	Sampling [	Date: <u>6/26/1</u>	19
Applicant/Owner: Puget Western, Inc.				State: WA	Sampling I	Point: DP-1	21
Investigator(s): Kyla Caddey			Section, To	ownship, Range: <u>11 / 13</u>	N / 02W		
Landform (hillslope, terrace, etc.): Valley Floor						Slope (%):	2
Subregion (LRR): <u>A2</u>	Lat: 46.6	621180		Long: -122.9039828	34	Datum: WC	3S-84
Soil Map Unit Name: Lacamas silt loam, 0 to 3 perce				NWI classifica			
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology sigr	-			ormal Circumstances" pres		No 🗆	
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers ir			
SUMMARY OF FINDINGS – Attach site map					,		s, etc.
Hydrophytic Vegetation Present? Yes 🗌 No 🗵							
Hydric Soil Present? Yes X No			he Sampled		<b>1</b>		
Wetland Hydrology Present? Yes 🗌 No 🗵		wit	hin a Wetlar	nd? Yes 🗌 N	.0 🗶		
Remarks: Not all wetland criteria met, only hydric soils.	Data collec	rted as ut	pland plot be	etween Wetlands N and (	) Precipita	tion was slic	abtly
below average at 58 percent of normal.	Data conce	icu as uj	pland plot be		J. I Iccipita	tion was sng	şiitiy
VEGETATION – Use scientific names of plant	ts.						
Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover		nt Indicator	Dominance Test works			
1			- <u> </u>	Number of Dominant Sp That Are OBL, FACW, o			(A)
23				Total Number of Domina Species Across All Stra			(B)
4				Percent of Dominant Sp	ecies		
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total	Cover	That Are OBL, FACW, o		%	(A/B)
1	. <u></u>			Prevalence Index work			
2				Total % Cover of:			
3				OBL species			
4				FACW species			
5	0	= Total		FAC species			
Herb Stratum (Plot size: 10 ft)	0	= rotar	Cover	UPL species			
1. Hypochaeris radicata	85	Yes	FACU	Column Totals:			
2. Juncus effusus	10	No	FACW		(//)		_ (D)
3. Parentucellia viscosa	5	No	FAC	Prevalence Index	= B/A =		
4				Hydrophytic Vegetatio	n Indicator	s:	
5				Rapid Test for Hydro	ophytic Vege	etation	
6				Dominance Test is >	>50%		
7				Prevalence Index is	≤3.0 <sup>1</sup>		
8 9				Morphological Adap data in Remarks			
10				Wetland Non-Vascu			
11				Problematic Hydrop			
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total	Cover	<sup>1</sup> Indicators of hydric soil be present, unless distu			must
1				the describe of			
2				Hydrophytic Vegetation			
	0	= Total	Cover		5 🗌 No 🗵	]	
% Bare Ground in Herb Stratum <u>0</u>							

Remarks: Hydrophytic vegetation criteria not met; prevalence index not warranted due to lack of combined hydric soil and hydrology.

Profile Desc	cription: (Describ	e to the	depth ne	eded to docun	nent the ir	ndicator	or confirm	n the ab	sence	of indicators.)
Depth	Matrix			Redo	x Features					
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
0 - 3	10YR 3/1	100			-	-	-	SiLo		Silt loam
3 - 10	10YR 3/1	95	7.5	5YR 4/6	5	С	PL,M	SiLo		Silt loam
10 - 16	10YR 4/1	93	7.5	5YR 4/6	7	С	PL,M	SiLo		Silt loam
					<u> </u>					
<sup>1</sup> Type: C=C	oncentration, D=De	epletion, I	RM=Red	luced Matrix, CS	S=Covered	or Coate	ed Sand G	rains.	<sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to	all LRR	s, unless other	wise note	d.)		In	idicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (S	5)				] 2 cm	Muck (A10)
	oipedon (A2)			Stripped Matrix	• •					Parent Material (TF2)
Black Hi				Loamy Mucky M		(except	MLRA 1)		-	Shallow Dark Surface (TF12)
	n Sulfide (A4)	(111)		Loamy Gleyed N				L	] Othe	r (Explain in Remarks)
-	l Below Dark Surfa ark Surface (A12)	ce (ATT)		Depleted Matrix Redox Dark Sur				31	ndicato	rs of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark Sur	. ,	)				nd hydrology must be present,
	ileyed Matrix (S4)			Redox Depressi		,				s disturbed or problematic.
Restrictive	Layer (if present):				. ,					÷
Type: No				_						
Depth (inches): N/A Hydric Soil Present? Yes 🗵 No 🗌										
Remarks:										
Hvdric soil	criteria met thr	ouah in	dicator	rs A11. F3. F	6.					
,		3		- , -,	-					
HYDROLO	CY									
-	drology Indicator								•	
	cators (minimum of	one requ	lired; ch							ndary Indicators (2 or more required)
Surface				Water-Stain		s (B9) ( <b>e</b> :	xcept MLI	RA	L W	ater-Stained Leaves (B9) (MLRA 1, 2,
-	ter Table (A2)				, and 4B)					4A, and 4B)
Saturatio	( )			Salt Crust (	,					rainage Patterns (B10)
	arks (B1)			Aquatic Inv		. ,				y-Season Water Table (C2)
	t Deposits (B2)									aturation Visible on Aerial Imagery (C9)
	oosits (B3)			Oxidized R	•	-	-	ots (C3)		eomorphic Position (D2)
-	t or Crust (B4)			Presence c			-			nallow Aquitard (D3)
	osits (B5)						,	,		AC-Neutral Test (D5)
	Soil Cracks (B6)	Imagan	(D7)	Stunted or		-	1) ( <b>LRR A</b>	)		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria			Other (Exp	iain in Ren	iarks)				ost-Heave Hummocks (D7)
	Vegetated Conca	ve Sunac	е (во)							
Field Obser		V 🗖		Depth (inches	. None					
Surface Wat		Yes 🗌	No 🔀							
Water Table		Yes 🗌	No 🗙	Depth (inches						
Saturation P (includes ca		Yes 🗌	No 🗙	Depth (inches			Wet	and Hyd	arology	y Present? Yes 🗌 No 🗵
	corded Data (strea	m gauge	monitor	ring well, aerial p	ohotos, pre	evious ins	pections),	if availa	ble:	
Remarks:										
No wetlan	d hydrology crit	eria me	t.							

Project/Site: 1244.0001 Jackson Highway City/Co	<sub>ounty:</sub> <u>Chehalis / Lewis</u>	_ Sampling Date: <u>6/26/19</u>
Applicant/Owner: Puget Western, Inc.	State: WA	_ Sampling Point: DP-122
Investigator(s): Kyla Caddey	Section, Township, Range: <u>11 / 13</u>	3N / 02W
Landform (hillslope, terrace, etc.): Valley Floor Local	I relief (concave, convex, none): <u>Conca</u>	
Subregion (LRR): <u>A2</u> Lat: <u>46.6210</u>		
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI classific	
Are climatic / hydrologic conditions on the site typical for this time of year? Ye		
Are Vegetation, Soil, or Hydrology significantly disturbed	? Are "Normal Circumstances" pre	esent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answers i	in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing same	pling point locations, transects	, important features, etc.
Hydric Soil Present? Yes 🕱 No	Is the Sampled Area within a Wetland? Yes 또 1	No 🗌
Remarks:		

All three wetland criteria met. Data collected within Wetland O. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: $\underline{2}$ (A)
2				
3				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
4	0	= Total C		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	<u> </u>		over	That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1. Fraxinus latifolia	5	Yes	FACW	Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
				OBL species         x 1 =
3				FACW species x 2 =
4			<u> </u>	· <u> </u>
5	5			FAC species x 3 =
Herb Stratum (Plot size: 10 ft)	5	= Total C	over	FACU species x 4 =
1 Hypochaeris radicata	30	Yes	FACU	UPL species x 5 =
2. Ranunculus repens	30	Yes	FAC	Column Totals: (A) (B)
				Dravalance Index - D/A -
3. Holcus lanatus	12	No	FAC	Prevalence Index = B/A =
4. Lotus corniculatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Epilobium ciliatum	10	No	FACW	Rapid Test for Hydrophytic Vegetation
6. Anthoxanthum odoratum	5	No	FACU	➤ Dominance Test is >50%
7. Alopecurus aequalis	2	No	OBL	□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				√ Vetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	99	= Total C	over	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Hydrophytic
2				Vegetation
	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>1</u>				
Remarks: Hydrophytic vegetation criteria met thro	ough the	dominand	ce test.	

Profile Desc	ription: (Describ	e to the o	depth n	eeded to docun	nent the i	ndicator	or confir	m the at	osence of i	ndicators.)	
Depth	Matrix			Redox	k Feature	<u>S</u>					
(inches)	Color (moist)	%	Col	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ire	Rei	<u>marks</u>
0 - 8	10YR 3/2	95	7.5	5YR 4/6	5	С	PL,M	SiLo	Si	lt loam	
8 - 16	10YR 4/1	90	7.5	5YR 4/6	7	С	PL,M	SiLo	Si	lt loam	
			10	YR 5/8	3	С	PL,M	SiLo			
						·					
					·	·					
					·	·					
						·					
						. <u> </u>					
<sup>1</sup> Type: C=Co	oncentration, D=De	epletion, F	RM=Red	luced Matrix, CS	=Covered	d or Coate	ed Sand G	Grains.	<sup>2</sup> Locatio	n: PL=Pore	Lining, M=Matrix.
	Indicators: (Appl						-				atic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (S	5)			C	2 cm Mu	ck (A10)	
Histic Ep	ipedon (A2)			Stripped Matrix (	,			C	Red Par	ent Material	(TF2)
Black His				Loamy Mucky M	ineral (F1	) (except	t MLRA 1)	) [	] Very Sha	allow Dark S	urface (TF12)
Hydroge	n Sulfide (A4)			Loamy Gleyed N	latrix (F2)	)		Ľ	Other (E	xplain in Rer	narks)
X Depleted	Below Dark Surfa	ce (A11)	×	Depleted Matrix	(F3)						
Thick Da	rk Surface (A12)		×	Redox Dark Sur	face (F6)			3	Indicators o	f hydrophytic	c vegetation and
	ucky Mineral (S1)			Depleted Dark S		7)			wetland h	ydrology mu	ist be present,
	leyed Matrix (S4)			Redox Depressi	ons (F8)				unless dis	sturbed or pr	oblematic.
	_ayer (if present):										
Type: No				_							
Depth (inches): N/A Hydric Soil Present? Yes X No								s 🗶 No 🗌			
Remarks:											
Hydric soil	criteria met thr	ough in	dicato	rs A11, F3, ai	nd F6.						
,		0		. ,							
	0)/										
HYDROLO											
-	drology Indicator				、 、				<b>•</b> •		( <b>2</b> )
	ators (minimum of	one requ	lired; ch								(2 or more required)
Surface \				Water-Stair			xcept ML	.RA			aves (B9) ( <b>MLRA 1, 2,</b>
🔲 High Wa	ter Table (A2)				, and 4B					, and 4B)	
Saturation	n (A3)			Salt Crust (	B11)				🗌 Draina	age Patterns	(B10)
Water Mater Mater	arks (B1)			Aquatic Inv	ertebrates	s (B13)			Dry-So	eason Water	<sup>·</sup> Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Od	lor (C1)			Satura	ation Visible	on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized R	hizospher	es along	Living Roo	ots (C3)	🗙 Geom	orphic Positi	on (D2)
🗌 Algal Ma	t or Crust (B4)			Presence o	f Reduce	d Iron (C4	4)		🗌 Shallo	w Aquitard (	D3)
Iron Dep	osits (B5)			Recent Iror	Reductio	on in Tille	d Soils (C	6)	🗙 FAC-N	leutral Test	(D5)
Surface S	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) ( <b>LRR A</b>	<b>A</b> )	Raise	d Ant Mound	ls (D6) ( <b>LRR A</b> )
Inundation	on Visible on Aeria	Imagery	(B7)	Other (Expl	ain in Rei	marks)			Frost-	Heave Humr	nocks (D7)
Sparsely Vegetated Concave Surface (B8)											
Field Obser	vations:										
Surface Wat	er Present?	Yes 🗌	No 🗙	Depth (inches	<sub>):</sub> None						
Water Table	Present?	Yes 🗌	No 🗵	Depth (inches							
Saturation P	resent?	Yes 🗌	No 🗵	Depth (inches			Wet	tland Hy	drology Pr	esent? Ye	es 🗵 No 🗌
(includes cap				ing well a second a							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Remarks:											
	drology criteri	a met th	rough	secondary in	dicators	s D2 an	d D5 Co	onside	ration of s	sub-domin	ants required for
		~	. ougit			- <u></u> un		2			

FAC-Neutral determination.

Project/Site: <u>1244.0001 Jackson Highway</u>	City/County:	Chehalis / Lewis	Sar	npling Date: <u>6/28/19</u>			
Applicant/Owner: Puget Western, Inc.		State:	WA Sar	npling Point: DP-123			
Investigator(s): Ryan Krapp	S	Section, Township, Ra	nge: <u>11 / 13N / (</u>	02W			
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): <u>1</u>			
Subregion (LRR): A2	46.621116	Long:1	22.90347835	Datum: WGS-84			
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slo	pes		NWI classification:	N/A			
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 pro	blematic?	(If needed, explain a	any answers in Rer	narks.)			
SUMMARY OF FINDINGS – Attach site map showin	ng sampling	point locations,	transects, im	oortant features, etc.			
Hydrophytic Vegetation Present?       Yes □       No ⊠         Hydric Soil Present?       Yes ⊠       No □		Sampled Area n a Wetland?	Yes 🗌 No 🗵				
Wetland Hydrology Present? Yes No 🗵							
Remarks: Not all three wetland criteria met, only hydric soils. D	)ata collected be	etween Wetlands O a	nd P. Precipitation	n was slightly below			
average at 58 percent of normal.							

				r
Trac Stratum (Distaire: 20 ft)	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
	0	= Total C	Cover	That Are OBL, FACW, or FAC: 0% (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
···	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: 10 ft)			20161	UPL species         x 5 =
1. Hypochaeris radicata	70	Yes	FACU	
2. Rumex acetosella	20	Yes	FACU	Column Totals: (A) (B)
3. Anthoxanthum odoratum	5	No	FACU	Prevalence Index = B/A =
4. Ranunculus repens	5	No	FAC	Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
				□ Dominance Test is >50%
6				$\square$ Prevalence Index is $\leq 3.0^{1}$
7				<ul> <li>Morphological Adaptations<sup>1</sup> (Provide supporting</li> </ul>
8				data in Remarks or on a separate sheet)
9				☐ Wetland Non-Vascular Plants <sup>1</sup>
10				<ul> <li>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</li> </ul>
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	100	= Total C	Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Hydrophytic
2				Vegetation
	0	= Total C	Cover	Present? Yes 🗌 No 🗵
% Bare Ground in Herb Stratum 0				
Remarks: No hydrophytic vegetation criteria me	t; prevaler	nce index	not warr	anted due to the lack of combined hydric soil
and hydrology.	· •			,,

Profile Des	cription: (Descril	be to the c	lepth nee	ded to docu	ument the	indicator	or confirm	the abs	ence of indicators.)
Depth	Matrix	(	-	Red	lox Feature	es			
(inches)	Color (moist)	%	Color	(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 7	10YR 2/2	100						SiLo	Silt loam
7 - 13	10YR 2/2	95	7.5Y	R 4/6	5	С	PL,M	SiLo	Silt loam
13 - 16	10YR 5/2	90	7.5Y	R 5/8	10	С	PL,M	SiLo	Silt loam
	· · · · · · · · · · · · · · · · · · ·								
	. <u> </u>						. <u> </u>		
							. <u> </u>		
	Concentration, D=D						ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (App	licable to				ted.)			licators for Problematic Hydric Soils <sup>3</sup> :
Histosol	( )			indy Redox					2 cm Muck (A10)
	pipedon (A2)			ripped Matrix	. ,	1) (22222			Red Parent Material (TF2)
	istic (A3) en Sulfide (A4)			amy Mucky amy Gleyed			( WILKA I)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		pleted Matri	-	<u>~</u> )			
	ark Surface (A12)			•	. ,	)		<sup>3</sup> In	dicators of hydrophytic vegetation and
	/ucky Mineral (S1)							wetland hydrology must be present,	
-	Gleyed Matrix (S4)								unless disturbed or problematic.
-	Layer (if present)	:			( )				•
Type: None									
Depth (inches): N/A Hydric Soil Present? Yes 🗵 No 🗌						: Soil Present? Yes 🗵 No 🗌			
Remarks:									
	l criteria met th	rough ind	dicator F	-6					
riyano oon		loughtin	aloator i	0.					
HYDROLO									
-	drology Indicator		irad, abaa	k all that any					Secondary Indicators (2 or more required)
	icators (minimum c	n one requ	_						
Surface			L	] Water-Sta			Except MLH	<b>KA</b>	Water-Stained Leaves (B9) (MLRA 1, 2,
-	ater Table (A2)		-		4A, and 4E	3)			4A, and 4B)
Saturatio	. ,			] Salt Crus					Drainage Patterns (B10)
	larks (B1)		_	Aquatic Ir		· · /			Dry-Season Water Table (C2)
	nt Deposits (B2)		L		n Sulfide O	. ,			Saturation Visible on Aerial Imagery (C9)
	posits (B3)					-	Living Roo	ts (C3)	Geomorphic Position (D2)
Algal Ma	at or Crust (B4)		Ľ	] Presence	of Reduce	ed Iron (C4	4)		Shallow Aquitard (D3)
	oosits (B5)		C	Recent Ir	on Reduct	ion in Tille	d Soils (C6	)	☐ FAC-Neutral Test (D5)
☐ Iron Dep								Raised Ant Mounds (D6) (LRR A)	
	Soil Cracks (B6)		-			`	··) ( <b>=</b> ····)		
Surface	Soil Cracks (B6) on Visible on Aeria	al Imagery	(B7) [	] Other (Ex	plain in Re	-	., (,		Frost-Heave Hummocks (D7)
<ul> <li>Surface</li> <li>Inundati</li> <li>Sparsely</li> </ul>	on Visible on Aeria y Vegetated Conca	• •	. ,	] Other (Ex	plain in Re	-			Frost-Heave Hummocks (D7)
Surface	on Visible on Aeria y Vegetated Conca	• •	e (B8)		·	emarks)	.) (,)		Frost-Heave Hummocks (D7)
<ul> <li>Surface</li> <li>Inundati</li> <li>Sparsely</li> </ul>	on Visible on Aeria y Vegetated Conca rvations:	• •	e (B8) No 🔀	Depth (inche	es): <u>None</u>	emarks)			☐ Frost-Heave Hummocks (D7)
Surface Inundati Sparsely Field Obser	on Visible on Aeria y Vegetated Conca rvations: ter Present?	ave Surface	e (B8) No 🗶 No 🗶		es): <u>None</u> None	emarks) e e	.)(,)		☐ Frost-Heave Hummocks (D7)

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

Remarks:

No wetland hydrology criteria met.

Project/Site: 1244.0001 Jackson Highway City/C	<sub>County:</sub> Chehalis / Lewis	Sampling Date: 6/28/19
Applicant/Owner: Puget Western, Inc.	State: WA	Sampling Point: DP-124
Investigator(s): Ryan Krapp	Section, Township, Range: <u>11</u> /	13N / 02W
Landform (hillslope, terrace, etc.): Valley Floor Loca	al relief (concave, convex, none): <u>Con</u>	
Subregion (LRR): <u>A2</u>		
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI class	
Are climatic / hydrologic conditions on the site typical for this time of year? Ye	es 🔲 No 🗵 (If no, explain in Remar	ks.)
Are Vegetation, Soil, or Hydrology significantly disturbed	d? Are "Normal Circumstances"	present? Yes 🗌 No 🗵
Are Vegetation, Soil, or Hydrology naturally problematic	? (If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transed	cts, important features, etc.
Hydrophytic Vegetation Present?       Yes I       No IX         Hydric Soil Present?       Yes IX       No IX         Wetland Hydrology Present?       Yes IX       No IX	Is the Sampled Area within a Wetland? Yes	] No 🗵
Remarks: Not all three wetland criteria met, only hydric soils were prese average at 58 percent of normal.	nt. Upland data plot for Wetland Q. I	recipitation was slightly below

-				1
Tree Stratum (Plat size: 20 ft)		Dominant Species?		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	<u>Species</u> ?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata:(B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> )				Describer on herber werden herefe
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3		·		OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )	00	Maa		UPL species x 5 =
1. Hypochaeris radicata	60	Yes	FACU	Column Totals: (A) (B)
2. Anthoxanthum odoratum	10	No	FACU	
3. Holcus lanatus	10	No	FAC	Prevalence Index = B/A =
4. Juncus effusus	5	No	FACW	Hydrophytic Vegetation Indicators:
5. Lotus corniculatus	5	No	FAC	Rapid Test for Hydrophytic Vegetation
<sub>6.</sub> Camassia quamash	5	No	FACW	Dominance Test is >50%
7. Schedonorus arundinaceus	5	No	FAC	□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				☐ Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
····	100	= Total C		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)			over	be present, unless disturbed or problematic.
1				
2				Hydrophytic
	0	= Total C	over	Vegetation Present? Yes ☐ No ⊠
% Bare Ground in Herb Stratum <u>0</u>		rotar o	0001	
Remarks:		oo indox	not wor	noted due to look of combined budgie colle and
	, prevalen	ice index	not warra	anted due to lack of combined hydric soils and
hydrology.				

Profile Desc	cription: (Describ	e to the de	epth needed to do	ocument the	indicator	or confirm	n the absence	e of indicators.)
Depth	Matrix			Redox Feature				
<u>(inches)</u> 0 - 8	<u>Color (moist)</u> 10YR 3/1	<u>%</u> 100	<u>Color (moist)</u>	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u> SiLo	<u>Remarks</u> Silt loam
8 - 13	10YR 3/2	90	5Y 3/3	10	С	М	SiLo	Silt loam
13 - 16			-		<u> </u>			Silt loam
13 - 10	10YR 3/2	30	7.5YR 6/8	10		PL,M	SiLo	Siitioani
			10YR 4/2	60	С	PL,M	SiLo	
	oncentration, D=D	oplotion Pl	M-Roducod Matrix			ad Sand G	rains <sup>2</sup> Lo	cotion: PL-Poro Lining M-Matrix
	Indicators: (Appl					eu Sanu G		cation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redo		,			n Muck (A10)
	pipedon (A2)		Stripped Ma					l Parent Material (TF2)
Black Hi			Loamy Muc	ky Mineral (F	1) (except	MLRA 1)	🗌 Ver	y Shallow Dark Surface (TF12)
	n Sulfide (A4)		🔲 Loamy Gley		2)		🗌 Oth	er (Explain in Remarks)
-	Below Dark Surfa	ace (A11)	Depleted Ma					
	ark Surface (A12)		Redox Dark	• •				ors of hydrophytic vegetation and
	lucky Mineral (S1)							and hydrology must be present,
	Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Image: Comparison of the present of th							ss disturbed or problematic.
Type: NC		•						
Depth (inches): N/A Hydric Soil Present? Yes X No						l Present? Yes 🗵 No 🗌		
Remarks:								
Hvdric soil	Hydric soil criteria met through indicator F6.							
HYDROLO	GY							
	drology Indicator	s:						
-	cators (minimum o		ed; check all that	apply)			Seco	ndary Indicators (2 or more required)
Surface				Stained Leav	/es (B9) ( <b>e</b>	xcept MLF		Vater-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,
	ter Table (A2)			2, 4A, and 4E				4A, and 4B)
☐ Saturatio			☐ Salt Cr		,			Prainage Patterns (B10)
U Water M	. ,			c Invertebrate	es (B13)			Dry-Season Water Table (C2)
	nt Deposits (B2)			gen Sulfide O	. ,			aturation Visible on Aerial Imagery (C9)
	oosits (B3)			, ed Rhizosphe	• •	Living Roo		Geomorphic Position (D2)
	it or Crust (B4)			ice of Reduce	-	-	. ,	hallow Aguitard (D3)
	osits (B5)			t Iron Reduct	-			AC-Neutral Test (D5)
-	Soil Cracks (B6)		 □ Stunte	d or Stressed	l Plants (D	1) ( <b>LRR A</b>	,	aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria	l Imagery (I		Explain in Re				rost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ve Surface	(B8)					
Field Obser	vations:							
Surface Wat	er Present?	Yes 🗌 🕴	No 🗴 Depth (in	<sub>ches):</sub> None	e			
Water Table	Present?		No 🗵 Depth (in					
Saturation P				ches): None	e	Wet	and Hydrolog	y Present? Yes 🗌 No 🗵
(includes ca	pillary fringe)							

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

Remarks:

No wetland hydrology criteria met.

Project/Site: 1244.0001 Jackson Highway City/	/County: Chehalis/ Lewis Sampling Date: 6/27/19
Applicant/Owner: Puget Western, Inc.	State: WA Sampling Point: DP-125
Investigator(s): Kyla Caddey	Section, Township, Range: <u>11 / 13N / 02W</u>
Landform (hillslope, terrace, etc.): Valley Floor	cal relief (concave, convex, none): <u>Concave</u> Slope (%): <u>2</u>
Subregion (LRR): <u>A2</u> Lat: <u>46.621</u>	235 Long: <u>-122.90324609</u> Datum: WGS 84
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year?	
Are Vegetation, Soil, or Hydrology significantly disturbe	ed? Are "Normal Circumstances" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic	c? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sar	mpling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes 🗵 No 🗌	
Hydric Soil Present? Yes 🗵 No 🗌	Is the Sampled Area within a Wetland? Yes X No
Wetland Hydrology Present? Yes 🗵 No 🗌	

Remarks: All three wetland criteria met. Data collected in Wetland P. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	,
2				( )	
				Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3		·		Species Across All Strata: <u>3</u> (B)	
4		= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/E	3)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					<i>'</i>
1		·		Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3		·		OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =	
<sub>1.</sub> Juncus effusus	40	Yes	FACW	Column Totals: (A) (E	3)
2. Plagiobothrys figuratus	15	Yes	FACW		
3. Deschampsia caespitosa	15	Yes	FACW	Prevalence Index = B/A =	
4. Phalaris arundinacea	10	No	FACW	Hydrophytic Vegetation Indicators:	
5. Alisma gramineum	10	No	OBL	Rapid Test for Hydrophytic Vegetation	
6. Holcus lanatus	5	No	FAC	☑ Dominance Test is >50%	
7. Ranunculus repens	3	No	FAC	□ Prevalence Index is ≤3.0 <sup>1</sup>	
8. Hypochaeris radicata	2	No	FACU	Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
9				│ Wetland Non-Vascular Plants <sup>1</sup>	
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11	400		·	<sup>1</sup> Indicators of hydric soil and wetland hydrology must	ł
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.	
1				Hadaaa ka Ala	
2				Hydrophytic Vegetation	
	0	= Total C	over	Present? Yes X No	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria met thro	ough the	dominan	ce test.		

Profile Desc Depth	ription: (Descrit Matrix		lepth ne		ment the i		or confirm	the abs	sence	of indicators.)	
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e	Remarks	
0 - 9	10YR 3/1	95	7.5	5YR 4/6	5	С	PL,M	SiLo		Silt loam	
9 - 16	10YR 4/1	93	7.5	5YR 4/6	7	С	PL,M	SiLo		Silt loam	
						·					
						·					
						·		. <u> </u>			
						·					
						·					
<sup>1</sup> Type: C=Co	oncentration, D=D	epletion F	M=Red	luced Matrix C	S=Covered	d or Coat	ed Sand Gr	ains	<sup>2</sup> 1 oc	cation: PL=Pore Lining, M=Ma	trix
	ndicators: (App									ors for Problematic Hydric So	
Histosol (	(A1)			Sandy Redox (S	S5)				2 cm	n Muck (A10)	
	ipedon (A2)			Stripped Matrix					Red	Parent Material (TF2)	
Black His	tic (A3)			Loamy Mucky N	/lineral (F1	) (except	t MLRA 1)		Very	Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed I		)			Othe	er (Explain in Remarks)	
•	Below Dark Surfa	ace (A11)		Depleted Matrix				2.			
	rk Surface (A12)			Redox Dark Su	. ,			°In		ors of hydrophytic vegetation a	
	ucky Mineral (S1) eyed Matrix (S4)			Depleted Dark S Redox Depress		()				nd hydrology must be present s disturbed or problematic.	
	ayer (if present)			Redux Depress	10115 (1-0)				unies	s disturbed of problematic.	
Type: NO		•									
· ·	hes): N/A			-				Hydri	e Soil	Present? Yes 🗵 No 🗌	
Remarks:	/							пушп	C 3011		
Hydric soli	criteria met thi	rougn ind	licator	'S A11, F3, a	ina F6.						
	оv										
Wetland Hyd	ع ا Irology Indicator	'S:									
-	ators (minimum o		ired: ch	eck all that anni	V)				Secor	ndary Indicators (2 or more rec	wired)
Surface \		i one requ	ircu, ori	Water-Stai		oc (B0) ( <b>c</b>	vcont MI P			ater-Stained Leaves (B9) (ML	
_	er Table (A2)				A, and 4B)			A		4A, and 4B)	NA 1, 2,
Saturatio				Salt Crust						rainage Patterns (B10)	
Water Ma	( )			Aquatic Inv	. ,	(B13)				ry-Season Water Table (C2)	
	t Deposits (B2)			Hydrogen		· · /				aturation Visible on Aerial Imag	nerv (C9)
Drift Dep						• •	Living Root	te (C3)	_	eomorphic Position (D2)	jery (00)
	t or Crust (B4)					-	-	13 (00)		hallow Aquitard (D3)	
						-	•, d Soils (C6)	<b>`</b>		AC-Neutral Test (D5)	
	Soil Cracks (B6)						1) ( <b>LRR A</b> )	·		aised Ant Mounds (D6) (LRR /	<b>A</b> )
	n Visible on Aeria	l Imagery	(B7)	Other (Exp		•	.) (=,			rost-Heave Hummocks (D7)	•)
	Vegetated Conca								<u> </u>		
Field Observ	5		(20)								
Surface Wate		Yes 🗌	No 🗙	Depth (inches	None						
Water Table		_	No 🗵	Depth (inches							
Saturation Pr			No 🔀	Depth (inches	·		Wath		rolog		
(includes cap		Yes 🗋		Depth (inches	s). <u>- 110110</u>		weuz	апа пуа	rolog	y Present? Yes 🗵 No 🗌	
	corded Data (strea	am gauge,	monitor	ing well, aerial	photos, pr	evious in	spections),	if availat	ole:		
Remarks:											
Wetland hy	drology criteri	a met th	rouah	secondary ir	ndicators	s D2 an	d D5.				
	3, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,										

Project/Site: 1244.0001 Jackson Highway	City/County: C	Chehalis / Lewis	Sam	pling Date: <u>6/27/19</u>			
Applicant/Owner: Puget Western, Inc.		State: WA	Sam	pling Point: DP-126			
Investigator(s): Kyla Caddey	Sec	ction, Township, Range:	11 / 13N / 0	2W			
				Slope (%): <u>2</u>			
Subregion (LRR): <u>A2</u>	621151	Long: <u>-122.</u>	90314083	Datum: WGS 84			
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	s	NW	l classification:	N/A			
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 problem	matic?	(If needed, explain any	answers in Rem	arks.)			
SUMMARY OF FINDINGS – Attach site map showing	sampling p	oint locations, tra	insects, imp	ortant features, etc.			
Hydrophytic Vegetation Present?       Yes       No         Hydric Soil Present?       Yes       No         Wetland Hydrology Present?       Yes       No		ampled Area Wetland?	Yes 🗌 No 🛛				
Remarks: Not all three wetland criteria met, only hydric soils. Uplan average at 58 percent of normal.	and plot betwe	en Wetlands P and Q.	Precipitation v	vas slightly below			
VEGETATION – Use scientific names of plants.							

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u>	(A)
2				Total Number of Dominant	
3				-	(B)
4				Demonst of Demineut Creation	
	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (	(A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					; •= )
1			<u> </u>	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	-
4				FACW species x 2 =	_
5				FAC species x 3 =	_
	0	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Hypochaeris radicata	40	Yes	FACU	Column Totals: (A)	
2. Anthoxanthum odoratum	30	Yes	FACU		- (-)
3. Lotus corniculatus	10	No	FAC	Prevalence Index = B/A =	
4. Ranunculus repens	10	No	FAC	Hydrophytic Vegetation Indicators:	
5. Holcus lanatus	5	No	FAC	Rapid Test for Hydrophytic Vegetation	
6. Schedonorus arundinaceus	5	No	FAC	Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide supportindata in Remarks or on a separate sheet)	ng
9				Wetland Non-Vascular Plants <sup>1</sup>	
10			<u> </u>	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	ı)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology m	nust
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes No 🗵	
Remarks: No hydrophytic vegetation criteria met;	prevalen	ce index	not warra	anted due to lack of combined hydric soils	s and

US Army Corps of Engineers

hydrology.

	ription: (Descrit		iehm ue	eded to docur		indicator		i the absen	ce of indicators.)		
Depth	Matrix				<u>x Feature</u>			_			
<u>(inches)</u> 0 - 2	Color (moist)	<u>%</u>	Cold	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	<u>Remarks</u> Silt loam		
	10YR 3/2	100					-	SiLo			
2 - 11	10YR 3/2	93	7.5	YR 4/6	7	С	PL,M	SiLo	Silt loam		
11 - 16	10YR 3/2	88	7.5	YR 4/6	12	С	PL,M	SiLo	Silt loam		
		_									
						·					
<sup>1</sup> Type: C=Co	<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.										
Hydric Soil I	Indicators: (App	licable to	all LRR	s, unless othe	wise not	ed.)		Indica	ators for Problematic Hydric Soils <sup>3</sup> :		
Histosol (				Sandy Redox (S					cm Muck (A10)		
	ipedon (A2)			Stripped Matrix	. ,				ed Parent Material (TF2)		
Black His				_oamy Mucky N			MLRA 1)		ery Shallow Dark Surface (TF12)		
	n Sulfide (A4) I Below Dark Surfa	000 (011)		_oamy Gleyed № Depleted Matrix		)		Πo	ther (Explain in Remarks)		
— ·	rk Surface (A12)			Redox Dark Sur				<sup>3</sup> Indic	ators of hydrophytic vegetation and		
Sandy Mucky Mineral (S1)								tland hydrology must be present,			
Sandy G	leyed Matrix (S4)			Redox Depressi	ons (F8)	,		unless disturbed or problematic.			
	_ayer (if present)	:									
Type: <u>No</u>				-							
Depth (inches): N/A Hydric Soil Present? Yes X No						oil Present? Yes 🗵 No 🗌					
Remarks:											
Hydric soil	criteria met th	ough in	dicator	F6.							
HYDROLO	GY										
Wetland Hyd	drology Indicator	s:									
Primary Indic	ators (minimum o	f one requ									
Surface V	Water (A1)							Se	condary Indicators (2 or more required)		
Surface Water (A1) Water-Stained Leaves (B9) (except MLRA						es (B9) ( <b>e</b>	xcept MLR		condary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b>		
					ned Leav	• • •	xcept MLR				
Saturatio	ter Table (A2) n (A3)		lired; ch	U Water-Stai	ned Leave A, and 4B	• • •	xcept MLR		Water-Stained Leaves (B9) (MLRA 1, 2,		
	n (A3)		lired; ch	Water-Stai	ned Leave <b>A, and 4B</b> (B11)	)	xcept MLR		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)		
Saturatio	n (A3)		ired; ch	☐ Water-Stai <b>1, 2, 4</b> ☐ Salt Crust	ned Leave <b>A, and 4B</b> (B11) rertebrate	<b>)</b> s (B13)	xcept MLR	<b>AA</b>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10)		
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sediment</li> </ul>	on (A3) arks (B1)		<u>ired; ch</u>	<ul> <li>□ Water-Stai</li> <li>1, 2, 44</li> <li>□ Salt Crust</li> <li>□ Aquatic Inv</li> </ul>	ned Leave A, and 4B (B11) rertebrate Sulfide Oc	) s (B13) lor (C1)			Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2)		
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sediment</li> <li>Drift Dep</li> </ul>	n (A3) arks (B1) t Deposits (B2)		<u>ired; ch</u>	<ul> <li>Water-Stai</li> <li>1, 2, 44</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence of</li> </ul>	ned Leave A, and 4B (B11) ertebrate Sulfide Oc hizosphe of Reduce	) lor (C1) res along d Iron (C4	Living Root	ts (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)		
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> <li>Drift Dep</li> <li>Algal Ma</li> </ul>	n (A3) arks (B1) t Deposits (B2) osits (B3)		<u>ired; ch</u>	<ul> <li>Water-Stai</li> <li>1, 2, 44</li> <li>Salt Crust of Aquatic Involution</li> <li>Hydrogen S</li> <li>Oxidized R</li> </ul>	ned Leave A, and 4B (B11) ertebrate Sulfide Oc hizosphe of Reduce	) lor (C1) res along d Iron (C4	Living Root	ts (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)		
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> <li>Drift Dep</li> <li>Algal Mai</li> <li>Iron Depe</li> <li>Surface S</li> </ul>	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)			<ul> <li>Water-Stai</li> <li>1, 2, 44</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen (</li> <li>Oxidized R</li> <li>Presence (</li> <li>Recent Iron</li> <li>Stunted or</li> </ul>	ned Leave (B11) ertebrate Sulfide Oc hizosphe of Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Root	<b>EA</b>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )		
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> <li>Drift Dep</li> <li>Algal Ma</li> <li>Iron Depa</li> <li>Surface \$</li> <li>Inundation</li> </ul>	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria		(B7)	<ul> <li>Water-Stai</li> <li>1, 2, 44</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen 3</li> <li>Oxidized R</li> <li>Presence c</li> <li>Recent Iron</li> </ul>	ned Leave (B11) ertebrate Sulfide Oc hizosphe of Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Root	<b>EA</b>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)		
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> <li>Drift Dep</li> <li>Algal Mai</li> <li>Iron Depp</li> <li>Surface S</li> <li>Inundatio</li> <li>Sparsely</li> </ul>	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca		(B7)	<ul> <li>Water-Stai</li> <li>1, 2, 44</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen (</li> <li>Oxidized R</li> <li>Presence (</li> <li>Recent Iron</li> <li>Stunted or</li> </ul>	ned Leave (B11) ertebrate Sulfide Oc hizosphe of Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Root	<b>EA</b>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )		
Saturatio Water Ma Sedimen Drift Dep Algal Mat Surface S Inundatio Sparsely Field Observer	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations:	ve Surfac	(B7) e (B8)	<ul> <li>Water-Stai</li> <li>1, 2, 44</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iron</li> <li>Stunted or</li> <li>Other (Exp</li> </ul>	ned Leave (B11) rertebrate Sulfide Oc hizosphe of Reduce n Reductio Stressed lain in Re	) dor (C1) res along d Iron (C <sup>2</sup> on in Tiller Plants (D marks)	Living Root	<b>EA</b>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )		
Saturatio Water Ma Sedimen Drift Dep Algal Ma Surface S Field Obsern Surface Water	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present?	ve Surfac	(B7) e (B8) No 🛛	Water-Stai 1, 2, 44 Salt Crust ( Aquatic Inv Hydrogen 3 Oxidized R Presence c Recent Iron Stunted or Other (Exp Depth (inches	ned Leave (B11) rertebrate Sulfide Oc hizospher of Reduce n Reduction Stressed lain in Re	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Root	<b>EA</b>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )		
Saturatio Water Ma Sedimen Drift Dep Algal Mai Iron Dep Surface S Inundatic Sparsely Field Observ Surface Water Water Table	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present?	ve Surface Yes Yes	(B7) e (B8) No 🗶 No 🗶	Water-Stai 1, 2, 44 Salt Crust ( Aquatic Inv Hydrogen 3 Oxidized R Presence c Recent Iron Stunted or Other (Exp Depth (inches Depth (inches	ned Leave (B11) rertebrate Sulfide Oc hizospher f Reduce n Reduction Stressed lain in Re	) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roof ) 1 Soils (C6 1) (L <b>RR A</b> )	ts (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)		
Saturatio Water Ma Sedimen Drift Dep Algal Mai Iron Dep Surface S Inundatic Sparsely Field Observ Surface Wate Water Table Saturation Privile Sat	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present?	ve Surfac	(B7) e (B8) No 🛛	Water-Stai 1, 2, 44 Salt Crust ( Aquatic Inv Hydrogen 3 Oxidized R Presence c Recent Iron Stunted or Other (Exp Depth (inches	ned Leave (B11) rertebrate Sulfide Oc hizospher f Reduce n Reduction Stressed lain in Re	) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roof ) 1 Soils (C6 1) (L <b>RR A</b> )	ts (C3)	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )		
Saturatio Kater Ma Sedimen Conft Dep Algal Ma Conft Dep	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present?	Yes □ Yes □ Yes □ Yes □	(B7) e (B8) No X No X No X	Water-Stai 1, 2, 44 Salt Crust ( Aquatic Inv Hydrogen 3 Oxidized R Presence c Recent Iron Stunted or Other (Exp Depth (inches Depth (inches	ned Leave (B11) rertebrate Sulfide Oc hizospher of Reduce n Reduction Stressed lain in Re (): None (): None	) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roof ) d Soils (C6 1) (LRR A)	ts (C3)       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       ) <td>Water-Stained Leaves (B9) (<b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) (<b>LRR A</b>) Frost-Heave Hummocks (D7)</td>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)		
Saturatio Kater Ma Sedimen Conft Dep Algal Ma Conft Dep	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present? present? pillary fringe)	Yes □ Yes □ Yes □ Yes □	(B7) e (B8) No X No X No X	Water-Stai 1, 2, 44 Salt Crust ( Aquatic Inv Hydrogen 3 Oxidized R Presence c Recent Iron Stunted or Other (Exp Depth (inches Depth (inches	ned Leave (B11) rertebrate Sulfide Oc hizospher of Reduce n Reduction Stressed lain in Re (): None (): None	) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roof ) d Soils (C6 1) (LRR A)	ts (C3)       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       )       ) <td>Water-Stained Leaves (B9) (<b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) (<b>LRR A</b>) Frost-Heave Hummocks (D7)</td>	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)		

Remarks:

No wetland hydrology criteria met.

Project/Site: 1244.0001 Jackson H	lighway	City/Coun	<sub>ty:</sub> Chehalis / Lewis	S	Sampling Date: <u>6/27/19</u>
Applicant/Owner: Puget Western, I	nc.		State:	NA s	Campling Point: DP-127
Investigator(s): Kyla Caddey			Section, Township, Ra	nge: <u>11 / 13N</u>	/ 02W
Landform (hillslope, terrace, etc.): Valle	ey Floor	Local reli			Slope (%): 2
Subregion (LRR): <u>A2</u>					Datum: WGS 84
Soil Map Unit Name: Lacamas silt lo	oam, 0 to 3 percen		NWI classificatio	n: <u>N/A</u>	
Are climatic / hydrologic conditions on th	e site typical for this tir	me of year? Yes [	] No 🗵 (If no, explain	in Remarks.)	
Are Vegetation, Soil, or Hy	drology signific	cantly disturbed?	Are "Normal Circun	nstances" preser	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hy	drology natural	ly problematic?	(If needed, explain a	any answers in R	emarks.)
SUMMARY OF FINDINGS - A	ttach site map sh	owing samplir	ng point locations,	transects, ir	nportant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes		he Sampled Area hin a Wetland?	Yes 🗵 No [	
Remarks:					

All three wetland criteria considered met. Data collected in Wetland Q. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				· · · · · · · · · · · · · · · · · · ·
		= Total C		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )			000	That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3.				OBL species         0         x 1 = 0
				FACW species 43 x 2 = 86
4		·		FAC species $19$ $x_3 = 57$
5	0		·	FACU species $38$ $x4 = 152$
Herb Stratum (Plot size: 10 ft)	0	= Total C	over	
1. Hypochaeris radicata	35	Yes	FACU	UPL species $0$ $x = 0$
2. Juncus effusus	35	Yes	FACW	Column Totals: <u>100</u> (A) <u>295</u> (B)
3. Alopecurus pratensis	11	No	FAC	Prevalence Index = $B/A = 2.95$
4. Ranunculus repens	8	No	FAC	Hydrophytic Vegetation Indicators:
5. Anthoxanthum odoratum	3	No	FACU	□ Rapid Test for Hydrophytic Vegetation
6. Epilobium ciliatum	3	No	FACW	Dominance Test is >50%
7. Phalaris arundinacea	3	No	FACW	Image: Prevalence Index is ≤3.0 <sup>1</sup>
8. Camassia quamash	2	No	FACW	Morphological Adaptations <sup>1</sup> (Provide supporting
9		·		data in Remarks or on a separate sheet)
				Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100		·	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.
1				
		·	·	Hydrophytic
2	0			Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum $0$	0	= Total C	over	
Remarke:				
Hydrophytic vegetation criteria met thro	ough prev	/alence ir	ndex.	

Depth (inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	dox Featur %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
0 - 3	10YR 3/2	100	-	-		-	SiLo	Silt loam
3 - 6	10YR 3/2	95	7.5YR 4/6	5	С	PL,M	SiLo	Silt loam
6 - 16	10YR 4/1	90	7.5YR 4/6	10	С	PL,M	SiLo	Silt loam
						<u> </u>		
	Concentration, D=De					ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
-	I Indicators: (Appl	icable to all			oted.)			dicators for Problematic Hydric Soils <sup>3</sup> :
Histoso			Sandy Redox				_	2 cm Muck (A10)
	pipedon (A2) listic (A3)		<ul> <li>Stripped Matr</li> <li>Loamy Mucky</li> </ul>	. ,	1) ( <b>oxcon</b>			Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleye					
	ed Below Dark Surfa	ce (A11)	Depleted Mat		<i>~</i> )			
	ark Surface (A12)		Redox Dark S	. ,	;)		<sup>3</sup> In	dicators of hydrophytic vegetation and
						wetland hydrology must be present,		
Sandy Gleyed Matrix (S4)						unless disturbed or problematic.		
	Layer (if present):		-	i				
Type: N								
Depth (ir	Depth (inches): N/A Hydric Soil Present? Yes X No							
Remarks:							•	
Hydric soi	I criteria met thr	ough indic	cator F3 and A	11.				
		0						
IYDROLO	DGY							
Wetland Hy	ydrology Indicators	s:						
Primary Ind	licators (minimum of	one require	d; check all that ap	oply)				Secondary Indicators (2 or more required)
Surface	Water (A1)		Water-S	tained Lea	ves (B9) ( <b>e</b>	except MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
High W	ater Table (A2)		1, 2,	4A, and 4	В)			4A, and 4B)
Saturati	ion (A3)		Salt Cru	st (B11)				Drainage Patterns (B10)
U Water N	Water Marks (B1)							Dry-Season Water Table (C2)
Sedime	nt Deposits (B2)		Hydroge	n Sulfide C	Odor (C1)			Saturation Visible on Aerial Imagery (C9)
						Living Roo	ts (C3)	Seomorphic Position (D2)
								Shallow Aquitard (D3)
Drift De	at or Crust (B4)							
Drift De					-	-	)	► FAC-Neutral Test (D5)
<ul> <li>Drift De</li> <li>Algal M</li> <li>Iron De</li> </ul>			Recent I	ron Reduct	tion in Tille	-	,	
<ul> <li>Drift De</li> <li>Algal M</li> <li>Iron De</li> <li>Surface</li> </ul>	posits (B5)	Imagery (B	☐ Recent I ☐ Stunted	ron Reduct	tion in Tille d Plants (D	d Soils (C6	,	FAC-Neutral Test (D5)

Inundation Visible on Aer	ial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)							
Sparsely Vegetated Conc	cave Surface (B8)									
Field Observations:										
Surface Water Present?	Yes 🗌 No 🗙	Depth (inches): None								
Water Table Present?	Yes 🗌 No 🗙	Depth (inches): None								
Saturation Present? (includes capillary fringe)	Yes 🗌 No 🗵	Depth (inches): <u>None</u>	Wetland Hydrology Present? Yes 🗵 No 🗌							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks:	Remarks:									

Wetland hydrology criteria met through secondary indicators D2 and D5. Consideration of sub-dominants required for FAC-Neutral determination.

Project/Site: 1244.0001 Jackson Highway City/	County: Chehalis / Lewis Sampling Date: 6/27/19						
Applicant/Owner: Puget Western, Inc.	State: WA Sampling Point: DP-128						
Investigator(s): Kyla Caddey	Section, Township, Range: <u>11 / 13N / 02W</u>						
Landform (hillslope, terrace, etc.): Valley Floor Loc	al relief (concave, convex, none): <u>Concave</u> Slope (%): <u>2</u>						
Subregion (LRR): <u>A2</u> Lat: <u>46.621</u>	030 Long: <u>-122.90203938</u> Datum: WGS 84						
Soil Map Unit Name: Lacamas silt Ioam, 0 to 3 percent slopes NWI classification: N/A							
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 disturbe	d? 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 X       No          Hydric Soil Present?       Yes X       No          Wetland Hydrology Present?       Yes X       No	Is the Sampled Area within a Wetland? Yes 🗵 No 🗌						

Remarks: All three wetland criteria met. Data collected in Wetland S. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4 <u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> )	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Schedonorus arundinaceus	34	Yes	FAC	Column Totals: (A) (B)
2. Agrostis capillaris	20	Yes	FAC	
3. Juncus effusus	15	No	FACW	Prevalence Index = B/A =
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Lotus corniculatus	10	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Anthoxanthum odoratum	5	No	FACU	➤ Dominance Test is >50%
7. Carex leporina	5	No	FACW	□ Prevalence Index is ≤3.0 <sup>1</sup>
8. Poa pratensis	1	No	FAC	<ul> <li>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
9				U Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100	- Tatal C		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.
1				Hydrophytic
2		·		Vegetation
% Bare Ground in Herb Stratum _0	0	= Total C	over	Present? Yes 🗵 No 🗌
Remarks: Hydrophytic vegetation criteria met thro	ough the	dominan	ce test.	
right oprigite vegetation ontend met un	sagn alo	aonnan		

Profile Desc	cription: (Descril	be to the	depth ne	eded to docu	nent the	indicator	or confirm	n the abse	ence of indicators.)	
Depth	Matrix			Redo	x Feature	s				
(inches)	Color (moist)	<u>%</u>	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		
0 - 2	10YR 3/1	100			-			SiLo	Silt loam	
2 - 10	10YR 3/1	90	7.5	YR 4/6	10	С	PL,M	SiLo	Silt loam	
10 - 16	10YR 4/1	90	7.5	YR 4/6	10	С	PL,M	SiLo	Silt loam	
							<u> </u>			
	oncentration, D=D						ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
	Indicators: (App	licable to				ed.)			icators for Problematic Hydric Soils <sup>3</sup> :	
Histosol				Sandy Redox (S	-				2 cm Muck (A10)	
Black His	pipedon (A2)			Stripped Matrix Loamy Mucky N					Red Parent Material (TF2) Very Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed I	•				Other (Explain in Remarks)	
	Below Dark Surfa	ace (A11)		Depleted Matrix		.)				
	ark Surface (A12)	· · ·	×	Redox Dark Su	face (F6)			<sup>3</sup> Inc	licators of hydrophytic vegetation and	
-	lucky Mineral (S1)	)		Depleted Dark \$		7)		wetland hydrology must be present,		
	leyed Matrix (S4)			Redox Depress	ions (F8)			1	unless disturbed or problematic.	
Type: NC	Layer (if present)	):								
	<sub>ches):</sub> N/A			-				1 to a dark of		
Remarks:								Hydric	Soil Present? Yes 🗵 No 🗌	
	oritorio mot th	rough in	diaata	ο Λ11 <b>Γ</b> Ο ο						
Hydric soll	criteria met th	rougn in	dicator	S ATT, F3, a	na Fo.					
HYDROLO	CV.									
		<b>r</b> o.								
-	drology Indicato cators (minimum c		uired: ch	eck all that ann	V)			c	Secondary Indicators (2 or more required)	
Surface			incu, on	Water-Stai		es (B9) ( <b>e</b>	vcent MI F		Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b>	
	ter Table (A2)				A, and 4E		vceht wirth		4A, and 4B)	
Saturatio	( )			Salt Crust		·)		Г	Drainage Patterns (B10)	
□ Water M				Aquatic Inv		s (B13)		Dry-Season Water Table (C2)		
	t Deposits (B2)			Hydrogen		. ,		-	☐ Saturation Visible on Aerial Imagery (C9)	
	osits (B3)						Living Roo	ts (C3)	Seomorphic Position (D2)	
	t or Crust (B4)			Presence		-	-	Ē	Shallow Aquitard (D3)	
Iron Dep	osits (B5)			Recent Iro	n Reducti	on in Tille	d Soils (C6	)	K FAC-Neutral Test (D5)	
Surface	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) ( <b>LRR A</b> )	) [	Raised Ant Mounds (D6) (LRR A)	
Inundation	on Visible on Aeria	al Imagery	(B7)	Other (Exp	lain in Re	marks)		C	] Frost-Heave Hummocks (D7)	
Sparsely	Vegetated Conca	ave Surfac	e (B8)							
Field Obser		_			Nore	. –				
Surface Wat		Yes 🗌	No 🗙	Depth (inches						
Water Table	Present?	Yes 🗌	No 🗙	Depth (inches						
Saturation P (includes cap		Yes 🗌	No 🗙	Depth (inches	s): <u>None</u>	•	Wetl	and Hydr	ology Present? Yes 🗵 No 🗌	
		am gauge	monitor	ing well, aerial	photos, p	revious in	spections),	if availabl	e:	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										

Remarks:

Wetland hydrology criteria met through secondary indicators D2 and D5. Consideration of sub-dominants required for FAC-Neutral determination.

Project/Site: 1244.0001 Jackson Highway City/Co	ounty: Chehalis / Lewis	Sampling Date: 6/28/19				
Applicant/Owner: Puget Western, Inc.	State: WA	Sampling Point: DP-129				
Investigator(s): Ryan Krapp	Section, Township, Range:	Section, Township, Range: <u>11 / 13N / 02W</u>				
		Convex Slope (%): <u>1</u>				
Subregion (LRR): <u>A2</u>						
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI c	lassification: <u>N/A</u>				
Are climatic / hydrologic conditions on the site typical for this time of year? Ye	s 🗌 No 🕱 (If no, explain in Re	marks.)				
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 same	oling point locations, tran	sects, important features, etc.				
Hydric Soil Present? Yes 🛛 No	Is the Sampled Area within a Wetland? Ye	s 🗌 No 🗵				
Remarks: Not all three wetland criteria met, lacks hydrology. Data collect average at 58 percent of normal.	ted between Wetlands S and R. F	recipitation was slightly below				

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)		Species?			
1	<u></u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
					( )
2				Total Number of Dominant	
3				Species Across All Strata: <u>1</u>	(B)
4		·		Percent of Dominant Species	
	0	= Total C	over		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)					
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	
	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Agrostis capillaris	80	Yes	FAC	Column Totals: (A)	
2. Holcus lanatus	5	No	FAC		_ (0)
3. Lotus corniculatus	5	No	FAC	Prevalence Index = B/A =	
4. Anthoxanthum odoratum	5	No	FACU	Hydrophytic Vegetation Indicators:	
5. Juncus effusus	5	No	FACW	Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide suppor	
9				data in Remarks or on a separate sheet)	
10				Wetland Non-Vascular Plants <sup>1</sup>	
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	n)
	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology	nust
Woody Vine Stratum (Plot size: <u>30 ft</u> )		- 10tal C		be present, unless disturbed or problematic.	
1					
2.				Hydrophytic	
L	0	= Total C		Vegetation Present? Yes X No	
% Bare Ground in Herb Stratum <u>0</u>	<u> </u>		over		
Remarks:				1	
Hydrophytic vegetation criteria met thr	ough the	dominan	ce test.		

Profile Description: (Describe to	the depth	needed to docur	nent the	indicator	or confirm	n the absenc	e of indicators.)		
Depth <u>Matrix</u>			x Feature						
(inches) Color (moist)		lor (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
	100 -		-		-	SiLo	Silt loam		
	97 7.	5YR 5/8	3	С	PL	SiLo	Silt loam		
7 - 14 10YR 3/1	90 7.	5YR 5/8	10	С	PL,M	SiLo	Silt loam		
						·			
<sup>1</sup> Type: C=Concentration, D=Deple Hydric Soil Indicators: (Applicat					ed Sand G		ocation: PL=Pore Lining, M=Matrix. tors for Problematic Hydric Soils <sup>3</sup> :		
	_			lea.)					
<ul> <li>Histosol (A1)</li> <li>Histic Epipedon (A2)</li> </ul>		Sandy Redox (S Stripped Matrix	-				m Muck (A10) d Parent Material (TF2)		
Black Histic (A3)			. ,	1) ( <b>excep</b> t	MLRA 1)		ry Shallow Dark Surface (TF12)		
Hydrogen Sulfide (A4)					,		ner (Explain in Remarks)		
Depleted Below Dark Surface (		•	. ,						
Thick Dark Surface (A12)	×	Redox Dark Sur	. ,			<sup>3</sup> Indicators of hydrophytic vegetation and			
<ul> <li>Sandy Mucky Mineral (S1)</li> <li>Sandy Gleyed Matrix (S4)</li> </ul>		Depleted Dark S Redox Depressi	•	-7)		wetland hydrology must be present, unless disturbed or problematic.			
Restrictive Layer (if present):		Redux Depressi	0115 (1-0)				ess disturbed of problematic.		
Type: None									
Depth (inches): N/A		_				Hvdric So	il Present? Yes 🗵 No 🗌		
Remarks:									
Hydric soil criteria met through indicator F6.									
HYDROLOGY									
Wetland Hydrology Indicators:									
Primary Indicators (minimum of one	e required; c	heck all that apply	y)			Sec	ondary Indicators (2 or more required)		
Surface Water (A1)		🗌 Water-Stai	ned Leav	es (B9) ( <b>e</b>	xcept ML		Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2)		1, 2, 44	A, and 4B	3)			4A, and 4B)		
Saturation (A3)		Salt Crust (	(B11)				Drainage Patterns (B10)		
Water Marks (B1)		Aquatic Inv		· /			Dry-Season Water Table (C2)		
Sediment Deposits (B2)		Hydrogen S		. ,			Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)		Oxidized R		-	-	· · ·	Geomorphic Position (D2)		
Algal Mat or Crust (B4)				-			Shallow Aquitard (D3)		
□ Iron Deposits (B5)       □ Recent Iron Reduction in Tilled Soils (C6)       □ FAC-Neutral Test (D5)         □ Surface Soil Cracks (B6)       □ Stunted or Stressed Plants (D1) (LRR A)       □ Raised Ant Mounds (D6) (LRR A)									
<ul> <li>Surface Soil Cracks (B6)</li> <li>Inundation Visible on Aerial Ima</li> </ul>	agony (B7)	☐ Stunted or ☐ Other (Exp		•	1) ( <b>LRR A</b>	·	Raised Ant Mounds (D6) ( <b>LRR A</b> ) Frost-Heave Hummocks (D7)		
Inundation Visible on Aerial Ima Sparsely Vegetated Concave S				illaiks)			FIOST-HEave Hummocks (D7)		
Field Observations:									
	s 🗌 No 🗵	Depth (inches	): None	;					
	s No 🗵								
	s No 🗵				Wet	land Hydrolo	gy Present? Yes 🗌 No 🗵		
(includes capillary fringe)						-			
Describe Recorded Data (stream g	jauge, monit	oring well, aerial p	onotos, pi	revious in	spections)	, if available:			

Remarks:

No wetland hydrology criteria met.

Project/Site: 1244.0001 Jackson Highway	City/County:	Chehalis / Lewis	Samplir	ng Date: <u>6/27/19</u>				
Applicant/Owner: Puget Western, Inc.		State: WA	Samplir	ng Point: DP-130				
Investigator(s): Kyla Caddey	s	Section, Township, Range:	<u>11 / 13N / 02V</u>	V				
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none):						
Subregion (LRR): <u>A2</u>								
Soil Map Unit Name: Lacamas silt Ioam, 0 to 3 percent slopes NWI classification: N/A								
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 a	answers in Remark	s.)				
SUMMARY OF FINDINGS – Attach site	map showing sampling	point locations, tra	nsects, impor	tant features, etc.				
Hydrophytic Vegetation Present?       Yes ⊠ I         Hydric Soil Present?       Yes ⊠ I         Wetland Hydrology Present?       Yes □ I	No	e Sampled Area n a Wetland? Y	/es 🗌 No 🛛					
Remarks: Not all wetland criteria met lacks wetl	and hydrology Unland plot fo	or Wetland R Precipitatio	n was slightly bel	ow average at 58				

Not all wetland criteria met, lacks wetland hydrology. Upland plot for Wetland R. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A	A)
2				Total Number of Dominant	
3				Species Across All Strata: 1 (B	3)
4				Demonstrat Demoissant Operation	
	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A	VB)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					)
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Schedonorus arundinaceus	70	Yes	FAC	Column Totals: (A)	(B)
2. Agrostis capillaris	15	No	FAC		(-)
3. Dactylis glomerata	10	No	FACU	Prevalence Index = B/A =	
4. Populus tremuloides	5	No	FACU	Hydrophytic Vegetation Indicators:	
5				□ Rapid Test for Hydrophytic Vegetation	
6				➤ Dominance Test is >50%	
7				□ Prevalence Index is $\leq 3.0^{1}$	
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	g
9					
10				Wetland Non-Vascular Plants <sup>1</sup>	
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology mu be present, unless disturbed or problematic.	ıst
Woody Vine Stratum (Plot size: <u>30 ft</u> )					
1				Hydrophytic	
2				Vegetation	
_	0	= Total C	over	Present? Yes 🗙 No 🗌	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria met thro	ouah dom	ninance te	est.		

Profile Dese	cription: (Descrit	be to the	depth n	eeded to docu	ment the	indicator	r or con	nfirm	the absenc	e of indicators.)	
Depth	Matrix			Redo	ox Feature	<u>es</u>					
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	2	Texture	Remarks	
0 - 2	10YR 3/2	100			-		-		SiLo	Silt loam	
2 - 9	10YR 3/1	97	7.5	5YR 3/4	3	С	PL,N	N	SiLo	Silt loam	
9 - 16	10YR 3/1	90	7.5	5YR 3/4	10	С	PL,N	N	SiLo	Silt loam	
17 0.0											
	oncentration, D=D Indicators: (App						ted San	d Gra		ocation: PL=Pore Lining, M=Matrix. tors for Problematic Hydric Soils <sup>3</sup> :	
				Sandy Redox (		ieu.)				m Muck (A10)	
	bipedon (A2)			Stripped Matrix						d Parent Material (TF2)	
Black Hi	,			Loamy Mucky I	· · ·	1) (excep	t MLRA	<b>(1)</b>		ry Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed	•	,		,		ner (Explain in Remarks)	
Depleted	Below Dark Surfa	ace (A11)		Depleted Matrix	k (F3)						
	ark Surface (A12)		Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and								
-	lucky Mineral (S1)			Depleted Dark		F7)			wetland hydrology must be present,		
Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Image: Comparison of the present of th							ess disturbed or problematic.				
Type: No		:									
	<sub>ches):</sub> N/A			_							
									NI Present? Yes 🗶 No 🗌		
Remarks:			-l' t	. 50							
Hydric soli	criteria met th	rougn in	dicato	F6.							
HYDROLO											
Wetland Hy	drology Indicator	'S:									
Primary Indi	cators (minimum o	f one requ	uired; ch	eck all that app	ly)				Sec	ondary Indicators (2 or more required)	
Surface	( )			Water-Sta		. , .	except l	MLR	A 🗆 V	Water-Stained Leaves (B9) (MLRA 1, 2,	
-	ter Table (A2)				A, and 4E	3)				4A, and 4B)	
Saturation	on (A3)			Salt Crust	• •					Drainage Patterns (B10)	
U Water M	. ,			Aquatic In						Dry-Season Water Table (C2)	
Sedimer	nt Deposits (B2)			Hydrogen	Sulfide O	dor (C1)				Saturation Visible on Aerial Imagery (C9)	
	oosits (B3)		Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)							Geomorphic Position (D2)	
-	it or Crust (B4)			Presence		-				Shallow Aquitard (D3)	
	osits (B5)			Recent Irc				` '		FAC-Neutral Test (D5)	
	Soil Cracks (B6)			Stunted or		•	01) ( <b>LRI</b>	<b>R A</b> )		Raised Ant Mounds (D6) (LRR A)	
	on Visible on Aeria		. ,	Other (Explored)	plain in Re	emarks)				Frost-Heave Hummocks (D7)	
	Vegetated Conca	ive Surfac	e (B8)								
Field Obser		. –				2					
Surface Wat		Yes 🗌	No 🗙	Depth (inche							
Water Table		Yes 🗌	No 🗵	Depth (inche							
Saturation P	resent?	Yes 🗌	No 🗙	Depth (inche	s): <u>INON</u> E	3	V	Vetla	and Hydrolo	gy Present? Yes 🗌 No 🗵	

(includes capillary fringe)

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

Remarks:

Project/Site: 1244.0001 Jackson Highway	City/County: Cheha	alis / Lewis	Sampling Date: <u>6/2</u>	7/19			
Applicant/Owner: Puget Western, Inc.		State: WA	Sampling Point: DF	<b>-</b> 131			
Investigator(s): Kyla Caddey	Section,	Township, Range: <u>11 /</u>	13N / 02W				
Landform (hillslope, terrace, etc.): Valley Floor		e, convex, none): Conv		%): <u>1</u>			
Subregion (LRR): A2 Lat: 46.	622099	Long: -122.90022	2236 Datum:	WGS 84			
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slope	s	NWI classif	fication: N/A				
Are climatic / hydrologic conditions on the site typical for this time of yea		(If no, explain in Remark					
Are Vegetation, Soil, or Hydrology significantly disturbed? 🛛 Are "Normal Circumstances" present? Yes 🗵 No 🗌							
Are Vegetation, Soil, or Hydrology naturally problem	matic? (If nee	ded, explain any answer	s in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing	sampling point	locations, transec	ts, important featu	res, etc.			
Hydrophytic Vegetation Present?       Yes I       No I         Hydric Soil Present?       Yes I       No I         Wetland Hydrology Present?       Yes I       No I	Is the Sample within a Wetl		No 🗵				
Remarks: Not all three wetland criteria met, only hydric soil. Data average at 58 percent of normal.	collected in an upla	nd plot for Wetland T. P	Precipitation was slightl	y below			

	Abaaluta	Daminan	h lucalization	Deminence Test workshest	
Tree Stratum (Plot size: 30 ft)	Absolute % Cover		t Indicator	Dominance Test worksheet:	
	<u>_/0 00VCI</u>	opeoles		Number of Dominant Species	( • )
1				That Are OBL, FACW, or FAC: 1	(A)
2				Total Number of Dominant	
3				Species Across All Strata: <u>1</u>	(B)
4				Dereent of Deminent Species	
	0	= Total C	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					()
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
···		= Total 0		FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )		Total C	0000	UPL species x 5 =	
1. Schedonorus arundinaceus	80	Yes	FAC	Column Totals:         (A)	
2. Agrostis capillaris	10	No	FAC		(D)
3. Poa pratensis	10	No	FAC	Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide suppor	ting
9				data in Remarks or on a separate sheet	
				Wetland Non-Vascular Plants <sup>1</sup>	
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Expla	in)
11	100	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology	must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	Cover	be present, unless disturbed or problematic.	
1		·		Hydrophytic	
2				Vegetation	
	0	= Total C	Cover	Present? Yes No 🗵	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thr	ough dom	ninance t	est.		

Profile Desc	ription: (Describe	to the de	oth needed to doci	ument the	indicator	or confirm	the ab	sence of indicators.)
Depth	Matrix			lox Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re Remarks
0 - 5	10YR 3/2	100	-	-	-	-	SiLo	Silt loam
5 - 16	10YR 3/2	93	5YR 4/6	7	С	PL,M	CILo	Clay loam
		·				·		
		· . <u></u>				·		
		·						
		·				·		
	oncentration, D=Dep	lotion PM	-Poducod Matrix (			od Sand Gr	aine	<sup>2</sup> Location: PL-Poro Lining M-Matrix
	Indicators: (Applic					eu Sanu Gi		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox		,			] 2 cm Muck (A10)
	ipedon (A2)		Stripped Matri					• • • • • • • • • • • • • • • • • • •
Black His			Loamy Mucky	· · /	1) ( <b>excep</b>	t MLRA 1)		Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks)								] Other (Explain in Remarks)
Depleted Below Dark Surface (A11)								
Thick Dark Surface (A12)						<sup>3</sup> I	ndicators of hydrophytic vegetation and	
Sandy Mucky Mineral (S1)     Depleted Dark Surface (F7)							wetland hydrology must be present,	
Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Image: Comparison of the problematic							unless disturbed or problematic.	
Type: NC								
	ches): N/A						L bacalar	
							Hyar	ic Soil Present? Yes 🗷 No 🗌
Remarks:								
Hydric soll	criteria met thro	ugn indi	cator F6.					
HYDROLO	GY							
Wetland Hy	drology Indicators:							
Primary India	cators (minimum of c	one require	d; check all that ap	oly)				Secondary Indicators (2 or more required)
Surface	Nater (A1)		U Water-St	ained Leav	/es (B9) ( <b>e</b>	xcept MLR	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)			4A, and 4E		•		4A, and 4B)
Saturatio	. ,		Salt Crus					Drainage Patterns (B10)
U Water M	. ,		Aquatic II		es (B13)			Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)		Hydrogen Sulfide Odor (C1)					Saturation Visible on Aerial Imagery (C9)
🗌 Drift Dep	osits (B3)		Oxidized	Rhizosphe	eres along	Living Root	ts (C3)	Geomorphic Position (D2)
	t or Crust (B4)		Presence	of Reduce	ed Iron (C4	4)		Shallow Aquitard (D3)
🔲 Iron Dep	osits (B5)		Recent Ir	on Reduct	ion in Tille	d Soils (C6)	)	☐ FAC-Neutral Test (D5)
Surface	Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)						Raised Ant Mounds (D6) (LRR A)	
Inundation	on Visible on Aerial I	magery (B	7) 🗌 Other (E>	plain in Re	emarks)			Frost-Heave Hummocks (D7)
Sparsely	Vegetated Concave	e Surface (	B8)					
Field Obser								
Surface Wat	er Present? Y	′es □ N	o 🔀 Depth (inche	<sub>es):</sub> None	Э			

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

Yes 🗌 No 🛛

Yes 🗌 No 🗵

Depth (inches): None

Depth (inches): None

Remarks:

No wetland hydrology criteria met.

Water Table Present?

Saturation Present?

Wetland Hydrology Present? Yes 🗌 No 🗵

Project/Site: 1244.0001 Jackson Highway	City/County:	Chehalis / Lewis	Sampli	ng Date: <u>6/27/19</u>			
Applicant/Owner: Puget Western, Inc.		State: WA	Sampli	ng Point: DP-132			
Investigator(s): Kyla Caddey	s	ection, Township, Range:	11 / 13N / 02V	V			
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none):					
Subregion (LRR): <u>A2</u>	at: 46.622606	Long: -122.9	0027421	Datum: WGS 84			
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes NWI classification: N/A							
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 significa	ntly disturbed?	Are "Normal Circumstar	ices" present? Y	es 🗵 No 🗌			
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, explain any a	nswers in Remark	<s.)< td=""></s.)<>			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present?       Yes X       No          Hydric Soil Present?       Yes X       No		Sampled Area	es 🕱 No 🗌				
Wetland Hydrology Present? Yes 🗵 No 🗌	within						
Remarks:							

All three wetland criteria met. Data collected in Wetland U. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?		Number of Dominant Species	
1				That Are OBL, FACW, or FAC: <u>2</u> (A)	)
2				Total Number of Dominant	
3				Species Across All Strata: <u>2</u> (B)	
4				Percent of Dominant Species	
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/I	B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				,	
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Phalaris arundinacea	60	Yes	FACW	Column Totals: (A) (I	B)
2. Juncus effusus	35	Yes	FACW		,
3. Lotus corniculatus	5	No	FAC	Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8		·		Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
9				↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology mus	t
	100	= Total C	over	be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: <u>30 ft</u> )					
1		·	. <u> </u>	Hydrophytic	
2				Vegetation	
	0	= Total C	over	Present? Yes 🗵 No 🗌	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ough the	dominan	ce test.		

Profile Desc	ription: (Descril	be to the	depth n	eeded to docu	ment the	indicator	or confi	m the a	bsence	of indicators.)	
Depth	Matrix	(		Redo	x Feature	es					
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ure	Remarks	
0 - 2	10YR 3/1	98	5Y	R 3/4	2	С	PL,M	SiLo		Silt loam	
2 - 16	10YR 3/1	88	7.5	5YR 3/4	12	С	PL,M	SiLo		Silt loam	
								·			
								·			
								·	<u> </u>		
								. <u> </u>			
								·			
	oncentration, D=D						ed Sand (			ation: PL=Pore Lining, M=Matrix.	
	Indicators: (App	licable to				ted.)				rs for Problematic Hydric Soils <sup>3</sup> :	
Histosol	· /			Sandy Redox (S						Muck (A10)	
	ipedon (A2)			Stripped Matrix	. ,	<b>A</b> N 7		-		Parent Material (TF2)	
Black His				Loamy Mucky N			t MLRA 1		-	Shallow Dark Surface (TF12)	
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)									r (Explain in Remarks)		
•	rk Surface (A12)	ace (ATT)		Redox Dark Su				3	Indicato	rs of hydrophytic vegetation and	
□ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7)								<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present,			
□ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8)										s disturbed or problematic.	
	Layer (if present)	:		•	( )					·	
Type: NO	ne			_							
Depth (ind	ches): <u>N/A</u>			-				Hvd	ric Soil	Present? Yes 🗵 No 🗌	
Remarks:											
	criteria met th	rough in	dianta	- EG							
riyunc son	chiena met in	loughtin	uicato	Γ0.							
HYDROLO											
-	drology Indicato										
Primary Indic	cators (minimum c	of one requ	uired; ch	eck all that appl	y)				Secor	ndary Indicators (2 or more required)	
Surface V	Nater (A1)			U Water-Stai	ined Leav	es (B9) ( <b>e</b>	xcept MI	.RA	$\square$ W	ater-Stained Leaves (B9) (MLRA 1, 2,	
🔲 High Wa	ter Table (A2)			1, 2, 4	A, and 4B	5)				4A, and 4B)	
Saturation	n (A3)			Salt Crust	(B11)				🗌 Dr	ainage Patterns (B10)	
Water Mater Mater	arks (B1)			Aquatic Inv	vertebrate	es (B13)			🗌 Dr	y-Season Water Table (C2)	
Sedimen	t Deposits (B2)			Hydrogen	Sulfide O	dor (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C9)	
Drift Dep	osits (B3)			Oxidized F	Rhizosphe	res along	Living Ro	ots (C3)	🗙 Ge	eomorphic Position (D2)	
🔲 Algal Ma	t or Crust (B4)			Presence	of Reduce	ed Iron (C	4)		🗌 Sh	nallow Aquitard (D3)	
Iron Dep									AC-Neutral Test (D5)		
Surface S	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) ( <b>LRR</b> /	4)	🗌 Ra	aised Ant Mounds (D6) ( <b>LRR A</b> )	
Inundation	on Visible on Aeria	al Imagery	(B7)	Other (Exp	olain in Re	emarks)			🗌 Fr	ost-Heave Hummocks (D7)	
Sparsely	Vegetated Conca	ave Surfac	e (B8)								
Field Obser	vations:										
Surface Wat	er Present?	Yes 🗌	No 🗙	Depth (inches	<sub>s):</sub> None	;					
Water Table	Present?	Yes 🗌	No 🗙	Depth (inches							
Saturation P		Yes 🗌	No 🗵	Depth (inches			We	tland Hv	droloa	y Present? Yes 🗵 No 🗌	
(includes cap	oillary fringe)				-					,	
Describe Re	corded Data (strea	am gauge	, monito	ring well, aerial	photos, p	revious in	spections	), if avail	able:		

Remarks:

Wetland hydrology criteria met through secondary indicators D2 and D5.

Project/Site: 1244.0001 Jackson Hig	Jhway	City/County	Chehalis / Lewis	Sam	pling Date: <u>6/28/19</u>		
Applicant/Owner: Puget Western, Inc	!=		State: _V	VA Sam	pling Point: DP-133		
Investigator(s): Ryan Krapp, Jake La	yman	:	Section, Township, Rar	nge: <u>11 / 13N / 0</u>	)2W		
Landform (hillslope, terrace, etc.): Valley	<sup>,</sup> Floor				Slope (%): <u>2</u>		
			590 Long: <u>-122.90016739 Datum: W</u>				
Soil Map Unit Name: Lacamas silt loa				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 Hydr	ology sig	nificantly disturbed?	Are "Normal Circum	stances" present?	Yes 🗵 No 🗌		
Are Vegetation, Soil, or Hydr	ology nat	urally problematic?	? (If needed, explain any answers in Remarks.)				
SUMMARY OF FINDINGS – Atta	ach site map	showing sampling	g point locations,	transects, imp	oortant features, etc.		
Hydric Soil Present? Wetland Hydrology Present?	Yes     No       Yes     No       Yes     No	withi	e Sampled Area n a Wetland?	Yes 🗌 No 🔀			
Remarks:							

Not all three wetland criteria met, lacks hydrology. Upland data plot for Wetland U. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: $2$ (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				· · · · · · · · · · · · · · · · · · ·
		= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				$\frac{1111}{1111} \text{ All OBL, FACW, OF FAC. } \frac{0776}{1111} (A/B)$
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3.				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
J.	0	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Agrostis capillaris	35	Yes	FAC	Column Totals:         (A)         (B)
2. Dactylis glomerata	25	Yes	FACU	
3. Holcus lanatus	25	Yes	FAC	Prevalence Index = B/A =
4. Anthoxanthum odoratum	10	No	FACU	Hydrophytic Vegetation Indicators:
5. Schedonorus arundinaceus	5	No	FAC	Rapid Test for Hydrophytic Vegetation
6				☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				☐ Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
····	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )		- 101010	0001	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
	0	= Total C	over	Present? Yes X No
% Bare Ground in Herb Stratum 0		101010		
Remarks:				

Profile Description: (Describe to the o	depth needed to docu	ment the	indicator	or confirm	the absence	e of indicators.)			
Depth <u>Matrix</u>	Red	ox Feature	es						
(inches) Color (moist) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks			
<u>0-4</u> <u>10YR 3/2</u> <u>100</u>	-	-	-	-	SiLo	Silt loam			
<u>4 - 8</u> <u>10YR 3/2</u> <u>95</u>	7.5YR 3/4	5	С	PL,M	SiLo	Silt loam			
8 - 16 10YR 3/2 85	7.5YR 3/4	15	С	PL,M	SiLo	Silt loam			
	_								
· · · ·				·					
				·					
				·		<u></u>			
· ·									
<sup>1</sup> Type: C=Concentration, D=Depletion, F				ed Sand Gr		ocation: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :									
Histosol (A1)	Sandy Redox (	-				m Muck (A10)			
<ul> <li>Histic Epipedon (A2)</li> <li>Black Histic (A3)</li> </ul>	Stripped Matrix	. ,				d Parent Material (TF2) y Shallow Dark Surface (TF12)			
☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4)	Loamy Mucky Loamy Gleyed					er (Explain in Remarks)			
Depleted Below Dark Surface (A11)	Depleted Matri		.)						
☐ Thick Dark Surface (A12)	Redox Dark Su				<sup>3</sup> Indicat	ors of hydrophytic vegetation and			
□ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) wetland hydrology must be present,									
Sandy Gleyed Matrix (S4)	Redox Depres	sions (F8)	,			ss disturbed or problematic.			
Restrictive Layer (if present):									
Type: None									
Depth (inches): N/A Hydric Soil Present? Yes 🗵 No 🗌									
Remarks:									
Hydric soil criteria met through in	dicator F6.								
HYDROLOGY									
Wetland Hydrology Indicators:									
Primary Indicators (minimum of one requ	ired; check all that app	oly)			Seco	ondary Indicators (2 or more required)			
Surface Water (A1)	Water-Sta	ined Leav	es (B9) ( <b>e</b>	xcept MLR	RA 🗆 V	Vater-Stained Leaves (B9) (MLRA 1, 2,			
High Water Table (A2)	1, 2, 4	A, and 4B	3)			4A, and 4B)			
Saturation (A3)	Salt Crust	(B11)				Drainage Patterns (B10)			
Water Marks (B1)	Aquatic In	vertebrate	s (B13)			Dry-Season Water Table (C2)			
Sediment Deposits (B2)	Hydrogen	Sulfide O	dor (C1)			Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3)		Rhizosphe	res along	Living Roo	ts (C3) 🔲 C	Geomorphic Position (D2)			
Algal Mat or Crust (B4)	Presence	of Reduce	ed Iron (C4	4)	□ \$	Shallow Aquitard (D3)			
☐ Iron Deposits (B5)	Recent Ire	on Reducti	on in Tille	d Soils (C6	) 🗆 F	AC-Neutral Test (D5)			
Surface Soil Cracks (B6)	Stunted o	r Stressed	Plants (D	1) ( <b>LRR A</b> )	🗌 F	Raised Ant Mounds (D6) ( <b>LRR A</b> )			
Inundation Visible on Aerial Imagery	(B7) Dther (Ex	plain in Re	emarks)		E F	Frost-Heave Hummocks (D7)			
Sparsely Vegetated Concave Surfact	e (B8)								
Field Observations:									
Surface Water Present? Yes	No 🔀 Depth (inche	<sub>s):</sub> None	)						
Water Table Present? Yes	No 🗵 Depth (inche								
Saturation Present? Yes	No 🗵 Depth (inche	<sub>s):</sub> None	)	Wetl	and Hvdrolog	gy Present? Yes 🗌 No 🗵			
Saturation Present?       Yes       No Image: N									

Remarks:

Project/Site: 1244.0001 Jackson Highway	City/County:	Chehalis / Lewis	Samplin	g Date: <u>6/28/19</u>
Applicant/Owner: Puget Western, Inc.		State: WA	Samplin	g Point: DP-134
Investigator(s): Ryan Krapp	S	ection, Township, Range: _	11 / 13N / 02W	V
Landform (hillslope, terrace, etc.): Valley Floor		concave, convex, none):		
Subregion (LRR): <u>A2</u> La	<sub>t:</sub> 46.621701	Long: -122.8	9887608	Datum: WGS 84
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent s	slopes	NWI	classification: <u>N/A</u>	4
Are climatic / hydrologic conditions on the site typical for this time	e of year? Yes 🗌	No 🗵 (If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrology significar	ntly disturbed?	Are "Normal Circumstan	ces" present? Ye	es 🔀 No 🗌
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, explain any ar	nswers in Remark	s.)
SUMMARY OF FINDINGS – Attach site map show	wing sampling	point locations, trar	nsects, import	tant features, etc.
Hydrophytic Vegetation Present?       Yes ⋈ No □         Hydric Soil Present?       Yes ⋈ No □         Wetland Hydrology Present?       Yes ⋈ No □		Sampled Area a Wetland? Ye	es 🗶 No 🗌	
Remarks:				

All three wetland criteria met. Data collected in Wetland V. Precipitation was slightly below average at 58 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: (A	A)
2				Total Number of Dominant	
3				Species Across All Strata: (B	3)
4				· · · · · · · · · · · · · · · · · · ·	.)
		= Total C		Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )		- 10(a) 0	0061	That Are OBL, FACW, or FAC: (A	<del>\</del> /В)
1				Prevalence Index worksheet:	
				Total % Cover of: Multiply by:	
2				OBL species         x 1 =	
3					
4		·		FACW species x 2 =	
5		·		FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )	05	Maa		UPL species x 5 =	
1. Phalaris arundinacea	65	Yes	FACW	Column Totals: (A)	(B)
2. Juncus effusus	25	Yes	FACW		
3. Anthoxanthum odoratum	5	No	FACU	Prevalence Index = B/A =	
4. Lotus corniculatus	5	No	FAC	Hydrophytic Vegetation Indicators:	
5				☑ Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide supporting	g
				data in Remarks or on a separate sheet)	0
9				Wetland Non-Vascular Plants <sup>1</sup>	
10		·	<u> </u>	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11	100	·	<u> </u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology mu	ust
Weedy Vine Stratum (Plat size: 20 ft)	100	= Total C	over	be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: <u>30 ft</u> )					
1		·		Hydrophytic	
2		·		Vegetation	
	0	= Total C	over	Present? Yes 🗵 No 🗌	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ough the	rapid test	t for hydro	ophytic vegetation.	

Profile Desc	cription: (Describe	to the de	pth needed to docu	iment the	indicator	or confirm	the abs	ence of indicate	ors.)	
Depth	Matrix	0/		ox Feature		. 2	<b>-</b> ,		<b>D</b>	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>		Texture		Remarks	
0 - 4	10YR 2/1	100	-	-			SiLo	Silt loar		
4 - 16	10YR 3/1	90	5YR 5/6	10	С	PL,M	SiLo	Silt loar	1	
					-					
·										
<sup>1</sup> Type: C=C	oncentration. D=Der	oletion. RN	I=Reduced Matrix, C	S=Covere	ed or Coat	ed Sand Gra	ins.	<sup>2</sup> Location: PL=	Pore Lining, M=Matrix.	
			I LRRs, unless othe						plematic Hydric Soils <sup>3</sup> :	
Histosol	(A1)		Sandy Redox (	S5)				2 cm Muck (A10	D)	
Histic Ep	oipedon (A2)		Stripped Matrix	(S6)				Red Parent Mat	terial (TF2)	
🔲 Black Hi	( )		Loamy Mucky	Mineral (F	1) ( <b>excep</b>	t MLRA 1)		Very Shallow D	ark Surface (TF12)	
					Other (Explain i	n Remarks)				
Depleted Below Dark Surface (A11) Depleted Matrix (F3)										
	Coark Surface (A12) I Redox Dark Surface (F6)					٥ln		phytic vegetation and		
	lucky Mineral (S1)		Depleted Dark	•	-7)			wetland hydrology must be present, unless disturbed or problematic.		
	ileyed Matrix (S4) Layer (if present):		Redox Depress	SIONS (FO)				uniess disturbed	or problematic.	
Type: NC										
	<sub>ches):</sub> N/A						Hvdrid	c Soil Present?	Yes 🗵 No 🗌	
Remarks:										
	criteria met thro	uah indi	cator E6							
l lyunc son		ugninui								
HYDROLO	GY									
Wetland Hy	drology Indicators									
Primary Indi	cators (minimum of o	one require	ed; check all that app	oly)				Secondary Indica	ators (2 or more required)	
Surface	Water (A1)		Water-Sta	ained Leav	/es (B9) ( <b>e</b>	except MLRA	4	Water-Staine	d Leaves (B9) ( <b>MLRA 1, 2,</b>	
🔲 High Wa	ter Table (A2)			A, and 4E	3)			4A, and 4		
Saturatio	on (A3)		Salt Crust	: (B11)				Drainage Pat	terns (B10)	
🔲 Water M	arks (B1)		Aquatic Ir	vertebrate	es (B13)			Dry-Season \	Water Table (C2)	
Sedimer	nt Deposits (B2)		Hydrogen	Sulfide O	dor (C1)			Saturation Vi	sible on Aerial Imagery (C9)	
Drift Dep	oosits (B3)		Oxidized	Rhizosphe	eres along	Living Roots	s (C3)	Seomorphic	Position (D2)	
🗌 Algal Ma	it or Crust (B4)		Presence	of Reduce	ed Iron (C	4)		🗌 Shallow Aqui	tard (D3)	
Iron Dep	osits (B5)		Recent Ire	on Reduct	ion in Tille	d Soils (C6)		➤ FAC-Neutral	Test (D5)	

Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1)	LRR A)	Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark		Other (Explain in Remarks)	Frost-Heave Hummocks (D7)				
Sparsely Vegetated Con	cave Surfac	e (B8)					
Field Observations:							
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None				
Water Table Present?	Yes 🗌	No 🗙	Depth (inches): None				
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🗙	Depth (inches): <u>None</u>	Wetland	Hydrology Present? Yes 🗵 No 🗌		
Describe Recorded Data (str	eam gauge	, monitor	ing well, aerial photos, previous inspe	ctions), if av	ailable:		
Remarks:							
Wetland hydrology crite	ria met th	rough	secondary indicators D2 and [	)5			

ign secondary ators D2 and D5.

Project/Site: 1244.0001 Jackson Highway	City/Cour	nty: Chehalis / Lewis	Sam	pling Date: <u>6/28/19</u>
Applicant/Owner: Puget Western, Inc.		State: W	A Sam	pling Point: DP-135
Investigator(s): Ryan Krapp		_ Section, Township, Rang	<sub>e:</sub> <u>11 / 13N / 0</u>	2W
Landform (hillslope, terrace, etc.): Valley Floor	Local re			
Subregion (LRR): <u>A2</u>				
Soil Map Unit Name: Lacamas silt loam, 0 to 3	3 percent slopes	N	WI classification:	N/A
Are climatic / hydrologic conditions on the site typical				
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circums	tances" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain an	y answers in Rem	arks.)
SUMMARY OF FINDINGS – Attach site	map showing sampli	ng point locations, t	ransects, imp	ortant features, etc.
Hydrophytic Vegetation Present? Yes 🗵		the Sampled Area		
Hydric Soil Present? Yes	No 🗙	thin a Wetland?	Yes 🗌 No 🕅	
Wetland Hydrology Present? Yes	No 🗙			
Remarks: Not all three wetland criteria met, only	v hydrophytic vegetation. U	pland data plot for Wetlan	d V. Precipitation	n was slightly below
average at 58 percent of normal.	,, ( <b>ego</b> tation, e	r r r		

-				
Trop Stratum (Dist size: 20 ft)	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species
				That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4				
	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				$\frac{10070}{10070}$
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
				$OBL species  0 \qquad \qquad x \ 1 = 0$
3				FACW species $0$ $x 2 = 0$
4		·	·	
5	-	·		FAC species $\frac{75}{10}$ x 3 = $\frac{225}{40}$
	0	= Total C	over	FACU species $10$ x 4 = $40$
Herb Stratum (Plot size: <u>10 ft</u> )	60	Vaa		UPL species 0 x 5 = 0
1. Schedonorus arundinaceus	60	Yes	FAC	Column Totals: <u>85</u> (A) <u>265</u> (B)
2. Lotus corniculatus	15	No	FAC	0.40
3. Anthoxanthum odoratum	10	No	FACU	Prevalence Index = $B/A = 3.12$
4				Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
				Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	85			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	00	= Total C	over	be present, unless disturbed or problematic.
1		·		Hydrophytic
2		·		Vegetation
% Bare Ground in Herb Stratum 15	0	= Total C	Cover	Present? Yes 🗵 No 🗌
Remarks: Hydrophytic vegetation criteria met thr	ough dom	ninance t	est.	

Profile Des	cription: (Describe	e to the de	epth needed to docu	ument the	indicator	or confirm	n the absenc	e of indicators.)						
Depth	Matrix		Red	lox Featur	es									
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks						
0 - 11	10YR 3/2	100	-	-	-	-	SiLo	Silt loam						
11 - 15	10YR 3/2	97	5YR 4/6	3	С	PL,M	SiLo	Silt loam						
		_												
	1	1 /	,			ed Sand G		<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.						
Hvdric Soil	Indiantara: (Annli)	aabla ta a												
	indicators. (Applie	cable to a	II LRRs, unless oth	erwise no	ted.)		Indicat	ors for Problematic Hydric Soils <sup>3</sup> :						
Histosol			Sandy Redox	(S5)	ted.)			ors for Problematic Hydric Soils <sup>3</sup> : m Muck (A10)						
Histosol				(S5)	ted.)		🗌 2 c	•						
Histosol	(A1) Dipedon (A2)		Sandy Redox	(S5) x (S6)	·	t MLRA 1)	☐ 2 ci ☐ Ree	m Muck (A10)						
Histosol Histic Ep	(A1) Dipedon (A2)		Sandy Redox	(S5) x (S6) Mineral (F	1) (except	t MLRA 1)	☐ 2 ci ☐ Red ☐ Ver	m Muck (A10) d Parent Material (TF2)						
Histosol Histic Ep Black Hi Hydroge	(A1) bipedon (A2) stic (A3)		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> </ul>	(S5) x (S6) Mineral (F Matrix (F	1) (except	t MLRA 1)	☐ 2 ci ☐ Red ☐ Ver	m Muck (A10) d Parent Material (TF2) y Shallow Dark Surface (TF12)						
Histosol Histic Ep Black Hi Hydroge	(A1) bipedon (A2) stic (A3) en Sulfide (A4)		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> </ul>	(S5) x (S6) Mineral (F Matrix (F ix (F3)	1) ( <b>excep</b> t 2)	t MLRA 1)	☐ 2 c ☐ Rea ☐ Ver ☐ Oth	m Muck (A10) d Parent Material (TF2) y Shallow Dark Surface (TF12)						
Histosol Histic Ep Black Hi Hydroge Depleted Thick Da	(A1) pipedon (A2) stic (A3) en Sulfide (A4) d Below Dark Surfac ark Surface (A12)		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> <li>Depleted Matrix</li> </ul>	(S5) x (S6) Mineral (F Matrix (F3) ix (F3) urface (F6	1) ( <b>excep</b> t 2)	t MLRA 1)	☐ 2 ci ☐ Rea ☐ Vei ☐ Oth <sup>3</sup> Indicat	m Muck (A10) d Parent Material (TF2) y Shallow Dark Surface (TF12) ner (Explain in Remarks)						
Histosol Histic Ep Black Hi Hydroge Depletee Thick Da Sandy M	(A1) bipedon (A2) stic (A3) n Sulfide (A4) d Below Dark Surfac		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> <li>Depleted Matrix</li> <li>Redox Dark Stripped</li> </ul>	(S5) x (S6) Mineral (F l Matrix (F ix (F3) urface (F6 Surface (	1) ( <b>excep</b> t 2) ) F7)	t MLRA 1)	☐ 2 ci ☐ Red ☐ Ver ☐ Oth <sup>3</sup> Indicat wett	m Muck (A10) d Parent Material (TF2) y Shallow Dark Surface (TF12) her (Explain in Remarks) tors of hydrophytic vegetation and						
Histosol Histic Ep Black Hi Hydroge Depleted Thick Da Sandy M Sandy G	(A1) bipedon (A2) stic (A3) on Sulfide (A4) d Below Dark Surfac ark Surface (A12) fucky Mineral (S1)		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> <li>Depleted Matrix</li> <li>Redox Dark Strip</li> <li>Depleted Dark</li> </ul>	(S5) x (S6) Mineral (F l Matrix (F ix (F3) urface (F6 Surface (	1) ( <b>excep</b> t 2) ) F7)	t MLRA 1)	☐ 2 ci ☐ Rea ☐ Ver ☐ Oth <sup>3</sup> Indicat wett	m Muck (A10) d Parent Material (TF2) ry Shallow Dark Surface (TF12) her (Explain in Remarks) tors of hydrophytic vegetation and and hydrology must be present,						
Histosol Histic Ep Black Hi Hydroge Depleted Thick Da Sandy M Sandy G	(A1) pipedon (A2) stic (A3) on Sulfide (A4) d Below Dark Surface ark Surface (A12) fucky Mineral (S1) Gleyed Matrix (S4) Layer (if present):		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> <li>Depleted Matrix</li> <li>Redox Dark Strip</li> <li>Depleted Dark</li> </ul>	(S5) x (S6) Mineral (F l Matrix (F ix (F3) urface (F6 Surface (	1) ( <b>excep</b> t 2) ) F7)	t MLRA 1)	☐ 2 ci ☐ Rea ☐ Ver ☐ Oth <sup>3</sup> Indicat wett	m Muck (A10) d Parent Material (TF2) ry Shallow Dark Surface (TF12) her (Explain in Remarks) tors of hydrophytic vegetation and and hydrology must be present,						
Histosol Histic Ep Black Hi Hydroge Depleted Sandy M Sandy G Restrictive Type: No	(A1) pipedon (A2) stic (A3) on Sulfide (A4) d Below Dark Surface ark Surface (A12) fucky Mineral (S1) Gleyed Matrix (S4) Layer (if present):		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> <li>Depleted Matrix</li> <li>Redox Dark Strip</li> <li>Depleted Dark</li> </ul>	(S5) x (S6) Mineral (F l Matrix (F ix (F3) urface (F6 Surface (	1) ( <b>excep</b> t 2) ) F7)	t MLRA 1)	2 cc Ret Ver Oth <sup>3</sup> Indicat wett unle	m Muck (A10) d Parent Material (TF2) ry Shallow Dark Surface (TF12) her (Explain in Remarks) tors of hydrophytic vegetation and and hydrology must be present,						
Histosol Histic Ep Black Hi Hydroge Depleted Sandy M Sandy G Restrictive Type: No	(A1) pipedon (A2) stic (A3) in Sulfide (A4) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Bleyed Matrix (S4) Layer (if present): DNE		<ul> <li>Sandy Redox</li> <li>Stripped Matrix</li> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> <li>Depleted Matrix</li> <li>Redox Dark Strip</li> <li>Depleted Dark</li> </ul>	(S5) x (S6) Mineral (F l Matrix (F ix (F3) urface (F6 Surface (	1) ( <b>excep</b> t 2) ) F7)	t MLRA 1)	2 cc Ret Ver Oth <sup>3</sup> Indicat wett unle	m Muck (A10) d Parent Material (TF2) y Shallow Dark Surface (TF12) her (Explain in Remarks) tors of hydrophytic vegetation and and hydrology must be present, here disturbed or problematic.						

No hydric soil indicators met; second layer is too deep (>8") and redox is not prevalent enough (<5%) to meet indicator F6 requirements.

### HYDROLOGY

Wetland Hydrology Indicato	rs:					
Primary Indicators (minimum of	of one req		Secondary Indicators (2 or more required)			
Surface Water (A1)	Surface Water (A1)				Water-Stained Leaves (B9) (MLRA 1, 2,	
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)	
Saturation (A3)			☐ Salt Crust (B11)		Drainage Patterns (B10)	
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)	
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3)			Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)			
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)	Shallow Aquitard (D3)		
Iron Deposits (B5)			Recent Iron Reduction in Tilled So	oils (C6)	FAC-Neutral Test (D5)	
Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (L	RR A)	Raised Ant Mounds (D6) (LRR A)	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)				Frost-Heave Hummocks (D7)		
Sparsely Vegetated Conca	ave Surfac	ce (B8)				
Field Observations:						
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None			
Water Table Present?	Yes 🗌	No 🗙	Depth (inches): <u>None</u>			
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🗵	Depth (inches): <u>None</u>	Wetland Hy	drology Present? Yes 🗌 No 🛛	
Describe Recorded Data (stre	am gauge	, monito	ing well, aerial photos, previous inspec	tions), if availa	able:	
Remarks:						
No wetland hydrology cr	iteria me	et.				

Project/Site: 1244.0001 Jackson Hig	hway	City/County	<u>:</u> Chehalis / Lewis	S	ampling Date: 7/12/19
Applicant/Owner: Puget Western, Inc.			State: W	<u>'A</u> s	ampling Point: DP-136
Investigator(s): Kyla Caddey		;	Section, Township, Rang	<sub>je:</sub> <u>11 / 13N /</u>	/ 02W
Landform (hillslope, terrace, etc.): Valley	Floor				Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u>	Lat:	46.621691	Long: <u>-12</u>	2.89943403	Datum: WGS 84
Soil Map Unit Name: Lacamas silt loar	n, 0 to 3 percent slo	pes	N	WI classification	<sub>n:</sub> <u>N/A</u>
Are climatic / hydrologic conditions on the s	ite typical for this time of	f year? Yes 🗌	No 🗵 (If no, explain i	n Remarks.)	
Are Vegetation, Soil, or Hydro	ology significantly	/ disturbed?	Are "Normal Circums	tances" presen	t? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydro	ology naturally pro	blematic?	(If needed, explain an	y answers in R	emarks.)
SUMMARY OF FINDINGS – Atta	ch site map showi	ng sampling	g point locations, t	ransects, in	nportant features, etc.
Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ⊠ Yes ⊠ No □ Yes □ No ⊠		e Sampled Area n a Wetland?	Yes 🗌 No 🛿	X
Remarks:					

Not all three wetland criteria met, only hydric soil. Upland plot for Wetland T. Precipitation was slightly below average at 61 percent of normal.

	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C	over	That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5		·		FAC species x 3 =
·		= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Anthoxanthum odoratum	50	Yes	FACU	Column Totals:         (A)         (B)
2. Agrostis capillaris	25	Yes	FAC	
3. Holcus lanatus	15	No	FAC	Prevalence Index = B/A =
4. Schedonorus arundinaceus	10	No	FAC	Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				□ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
· · · · <u> </u>	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )		10tai C	00001	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
	0	= Total C	Cover	Present? Yes No 🗵
% Bare Ground in Herb Stratum <u>0</u>		-		
Remarks: Hydrophtic vegetation criteria is not m	et: preval	ence inde	ex not wa	rranted due to a lack of combined hydric soil
and hydrology.	iot, provar			

Profile Desc	cription: (Describ	e to the de	pth ne	eded to docun	nent the i	ndicator	or confirm	n the ab	sence c	of indicators.)
Depth	Matrix			Redo	x Features					
(inches)	Color (moist)	%		or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
0 - 6	10YR 3/2	99	7.5	YR 4/6	1	С	PL,M	SiLo	<u> </u>	Silt loam
6 - 16	10YR 3/2	93	7.5	YR 4/6	7	С	PL,M	SiLo		Silt loam
						·				
					·	. <u> </u>				
						·			· ·	
	oncentration, D=De						ed Sand Gr			ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	I LRR	s, unless other	wise note	ed.)		In	ndicator	s for Problematic Hydric Soils <sup>3</sup> :
Histosol	( )			Sandy Redox (S	-			Ľ		Muck (A10)
•	ipedon (A2)			Stripped Matrix	. ,					Parent Material (TF2)
Black His				Loamy Mucky M			MLRA 1)			Shallow Dark Surface (TF12)
	n Sulfide (A4)	( )		Loamy Gleyed N				L	] Other	(Explain in Remarks)
•	l Below Dark Surfa ırk Surface (A12)	ce (A11)		Depleted Matrix Redox Dark Sur				31	ndiaatar	a of hydrophytic vogotation and
	lucky Mineral (S1)			Depleted Dark Sur	. ,	7)				s of hydrophytic vegetation and d hydrology must be present,
	leyed Matrix (S4)			Redox Depressi	•	)				disturbed or problematic.
	Layer (if present):		<u> </u>		0.10 (1.0)					
Type: No				_						
Depth (in	<sub>ches):</sub> N/A			-				Hydr	ic Soil F	Present? Yes 🗵 No 🗌
Remarks:	,							nyai		
	auitauia waat thu	امماني مان								
Hydric Soli	criteria met thr	ougn indi	cator	F0.						
HYDROLO	GY									
Wetland Hy	drology Indicators	5:								
-	cators (minimum of		ed; che	eck all that apply	()				Second	dary Indicators (2 or more required)
Surface				U Water-Stair		s (B9) ( <b>e</b> )	xcept MLR	2A	□ Wa	ter-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,
	ter Table (A2)				, and 4B)					4A, and 4B)
Saturatio				□ Salt Crust (						ninage Patterns (B10)
Water Mater	( )			Aquatic Inv		(B13)				-Season Water Table (C2)
	t Deposits (B2)			Hydrogen S		. ,				curation Visible on Aerial Imagery (C9)
Drift Dep				Oxidized R			l ivina Root	ts (C3)		omorphic Position (D2)
	t or Crust (B4)					-	-			allow Aquitard (D3)
	osits (B5)			Recent Iror		•		)		C-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or				,		ised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery (E	37)	Other (Exp		-	.)()			st-Heave Hummocks (D7)
	Vegetated Concav					, , ,				
Field Obser	-		()							
Surface Wat		Yes 🗌 🛛 N	lo 🗙	Depth (inches	None					
Water Table			lo 🔀	Depth (inches						
				Depth (inches			Made			
Saturation P (includes cap		Yes 🗌 N	lo 🗙	Depth (Inches	):		vvetia	and Hyd	arology	Present? Yes 🗌 No 🗵
	corded Data (strea	m gauge, n	nonitor	ing well, aerial p	photos, pre	evious ins	pections),	if availa	ble:	
Remarks:										

Project/Site: 1244.0001 Jackson Highway City/	<sub>County:</sub> Chehalis / Lewis	Sampling Date: 7/12/19				
Applicant/Owner: Puget Western, Inc.	State: WA	Sampling Point: DP-137				
Investigator(s): Kyla Caddey	Section, Township, Range: <u>11 / *</u>	13N / 02W				
Landform (hillslope, terrace, etc.): Valley Floor Loc	al relief (concave, convex, none): <u>Conv</u>	ex Slope (%): <u>1</u>				
Subregion (LRR): <u>A2</u> Lat: <u>46.622</u>						
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI classifi	ication: PEM1A				
Are climatic / hydrologic conditions on the site typical for this time of year? Y						
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 🗵 No 🗌						
Are Vegetation, Soil, or Hydrology naturally problematic						
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transect	s, important features, etc.				
Hydrophytic Vegetation Present?       Yes ⋈ No □         Hydric Soil Present?       Yes ⋈ No □         Wetland Hydrology Present?       Yes □ No ⋈	Is the Sampled Area within a Wetland? Yes 🗌	No 🗵				
Remarks: Not all three wetland criteria met, lacks hydrology. Data colle average at 61 percent of normal.	cted as upland plot for Wetland W. Pre-	cipitation was slightly below				

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)		Species?			
	<u></u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
					()
2				Total Number of Dominant	
3		·		Species Across All Strata: <u>1</u>	(B)
4	0			Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
				Prevalence Index worksheet:	
1				Total % Cover of: Multiply by:	
2					
3				OBL species x 1 =	
4				FACW species x 2 =	_
5				FAC species x 3 =	_
	0	= Total C	over	FACU species x 4 =	
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )	<u> </u>	Vee	<b>F</b> AO	UPL species x 5 =	_
1. Lotus corniculatus	60	Yes	FAC	Column Totals: (A)	(B)
2. Agrostis capillaris	14	No	FAC		
3. Anthoxanthum odoratum	10	No	FACU	Prevalence Index = B/A =	
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:	
5. Juncus effusus	5	No	FACW	Rapid Test for Hydrophytic Vegetation	
6. Cirsium vulgare	1	No	FACU	☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide support	ting
9				data in Remarks or on a separate sheet)	
				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology r	nust
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2	0			Vegetation Present? Yes X No	
% Bare Ground in Herb Stratum $0$	0	= Total C	over		
Remarks:				I	
Hydrophytic vegetation criteria met thr	ough dorr	ninance t	est.		

Profile Desc	cription: (Describ	e to the de	pth needed to d	ocument the	indicator	or confirm	the absence	e of indicators.)
Depth	Matrix			Redox Feature				
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0 - 4	10YR 3/2	100	-				SiLo	Silt loam
4 - 7	10YR 3/2	93	5YR 3/4	7	С	PL,M	SiLo	Silt loam
7 - 16	10YR 3/2	85	5YR 3/4	15	С	PL,M	SiLo	Silt loam
								· · · · · · · · · · · · · · · · · · ·
	oncentration, D=De					ed Sand Gr		cation: PL=Pore Lining, M=Matrix.
	Indicators: (Appl	icable to a			ted.)			ors for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Red					n Muck (A10)
Black His	oipedon (A2)		Stripped M	atrix (S6) cky Mineral (F				l Parent Material (TF2) y Shallow Dark Surface (TF12)
	n Sulfide (A4)			yed Matrix (F2				er (Explain in Remarks)
Depleted Below Dark Surface (A11) Depleted Matrix (F3)								
Thick Dark Surface (A12) Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and							ors of hydrophytic vegetation and	
	lucky Mineral (S1)		•	ark Surface (F	7)			and hydrology must be present,
	leyed Matrix (S4)		🗌 Redox Dep	ressions (F8)			unle	ss disturbed or problematic.
Restrictive Type: No	Layer (if present):							
	<sub>ches):</sub> N/A							
	ches). <u></u>						Hydric Soi	I Present? Yes 🗵 No 🗌
Remarks:								
Hydric soll	criteria met thr	ougn indi	Icator F6.					
HYDROLO	GY							
Wetland Hydrology Indicators:								
Primary Indi	cators (minimum of	one requir	ed; check all that	apply)			Seco	ndary Indicators (2 or more required)
Surface	· · /			-Stained Leav		xcept MLR	A DV	Vater-Stained Leaves (B9) (MLRA 1, 2,
•	iter Table (A2)		-	2, 4A, and 4B	5)			4A, and 4B)
Saturatio				rust (B11)	(5.4.0)			Prainage Patterns (B10)
☐ Water M	. ,			ic Invertebrate	. ,			Ory-Season Water Table (C2)
	nt Deposits (B2)		-	gen Sulfide O		Linder Deed		aturation Visible on Aerial Imagery (C9)
	oosits (B3)			ed Rhizosphe nce of Reduce	-	-		Geomorphic Position (D2)
	at or Crust (B4) posits (B5)			nce of Reduce	•	,		hallow Aquitard (D3) AC-Neutral Test (D5)
-	Soil Cracks (B6)			ed or Stressed		• • •		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery (F		(Explain in Re	•			rost-Heave Hummocks (D7)
	Vegetated Concav	•••	,		inance)			
Field Obser			( )					
Surface Wat	er Present?	Yes 🗌 🛛 🛛	lo 🗴 Depth (ir	nches): None	;			
Water Table				nches): None				
Saturation P				nches): None		Wetla	and Hydrolog	jy Present? Yes 🗌 No 🗵
(includes ca	pillary fringe)							
Describe Re	corded Data (strea	m gauge, n	nonitoring well, a	erial photos, p	revious in	spections),	it available:	
Remarks:								

Project/Site: 1244.0001 Jackson Highway	City/County	: Chehalis / Lewis	Samplir	ng Date: 7/12/19		
Applicant/Owner: Puget Western, Inc.		State: WA	Samplir	ng Point: <u>DP-138</u>		
Investigator(s): Kyla Caddey		Section, Township, Range:	11 / 13N / 02V	V		
Landform (hillslope, terrace, etc.): Valley Floor		f (concave, convex, none):	-			
Subregion (LRR): <u>A2</u>	Lat: 46.620899	Long: -122.	90070963	Datum: WGS 84		
Soil Map Unit Name: Lacamas silt loam, 0 to	3 percent slopes	NW	l classification: <u>N/</u>	4		
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 a	answers in Remark	s.)		
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydric Soil Present? Yes 🗵	No 🗖	e Sampled Area n a Wetland?	Yes 🗌 No 🛛			
Remarks:						

Not all three wetland criteria met, lacks hydrology. Upland plot for Wetland X. Precipitation was slightly below average at 61 percent of normal.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Agrostis capillaris	55	Yes	FAC	Column Totals: (A) (B)
2. Holcus lanatus	40	Yes	FAC	
3. Schedonorus arundinaceus	5	No	FAC	Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				➤ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				<ul> <li>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
9				Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100		<u> </u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.
1				
2				Hydrophytic
<u></u>	0	= Total C	over	Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum 0				
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est.	

Profile Description: (Describe to the	e depth needed to do	cument the	indicator	or confirm	the absenc	e of indicators.)	
Depth <u>Matrix</u>	Re	edox Featur	es				
(inches) Color (moist) %		%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0 - 5 7.5YR 3/2 100	) -	-			SiLo	Silt loam	
5 - 16 10YR 3/2 93	5YR 4/6	7	С	PL,M	SiLo	Silt loam	
·							
						- <u> </u>	
<sup>1</sup> Type: C=Concentration, D=Depletion Hydric Soil Indicators: (Applicable)				ed Sand Gra		cocation: PL=Pore Lining, M=Matrix.	
			itea.)				
Histosol (A1)	Sandy Redo					m Muck (A10) d Parent Material (TF2)	
Histic Epipedon (A2)       Stripped Matrix (S6)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)				MIRA1)		ry Shallow Dark Surface (TF12)	
Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)     Other (Explain in Remarks)					
Depleted Below Dark Surface (A11) Depleted Matrix (F3)						, , , , , , , , , , , , , , , , , , ,	
Thick Dark Surface (A12)	× Redox Dark	Surface (F6	)		<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy Mucky Mineral (S1)	Depleted Date	•	,		wetland hydrology must be present,		
Sandy Gleyed Matrix (S4)	Redox Depres	essions (F8)			unle	ess disturbed or problematic.	
Restrictive Layer (if present):							
Type: <u>None</u>							
Depth (inches): <u>N/A</u>					Hydric So	il Present? Yes 🗵 No 🗌	
Remarks:							
Hydric soil criteria met through	indicator F6.						
HYDROLOGY							
Wetland Hydrology Indicators:							
Primary Indicators (minimum of one re	quired: check all that a	(vlan			Sec	ondary Indicators (2 or more required)	
			(P0) (P	voont MI B			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> </ul>	Water-S	, 4A, and 4I			A LI	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
Saturation (A3)	Salt Cru		-)			Drainage Patterns (B10)	
Water Marks (B1)		Invertebrat	es (B13)			Dry-Season Water Table (C2)	
Sediment Deposits (B2)		en Sulfide C	. ,			Saturation Visible on Aerial Imagery (C9)	
				Living Root		Geomorphic Position (D2)	
☐ Algal Mat or Crust (B4)							
☐ Iron Deposits (B5)		Iron Reduct				FAC-Neutral Test (D5)	
Surface Soil Cracks (B6)		l or Stressed		, ,		Raised Ant Mounds (D6) (LRR A)	
Inundation Visible on Aerial Image		Explain in R	•	/ /		Frost-Heave Hummocks (D7)	
□ Sparsely Vegetated Concave Surfa							
			cinarks)			× ,	
						. ,	
Field Observations:         Surface Water Present?	ace (B8)	·			·		
Field Observations:	ace (B8) No ⊠ Depth (inc	hes): Non	9				

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

Remarks:

Project/Site: 1244.0001 Jackson Highway	City/County: Ch	ehalis / Lewis	_ Sampling Date: <u>7/12/19</u>			
Applicant/Owner: Puget Western, Inc.		State: WA	_ Sampling Point: DP-139			
Investigator(s): Kyla Caddey	Sectio	on, Township, Range: <u>11 / 1</u>	3N / 02W			
Landform (hillslope, terrace, etc.): Valley Floor			ave Slope (%): 1			
Subregion (LRR): <u>A2</u>	Lat: 46.620834	Long: -122.900343	B09 Datum: WGS 84			
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent	t slopes	NWI classific				
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 naturall	ly 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 ⋈ No □         Hydric Soil Present?       Yes ⋈ No □         Wetland Hydrology Present?       Yes ⋈ No □		npled Area /etland? Yes 🔀	No 🗌			
Remarks:						

All three wetland criteria met. Data collected in Wetland X. Precipitation was slightly below average at 61 percent of normal.

	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
	0	= Total C	Cover	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				
1				Prevalence Index worksheet:
2		. <u> </u>		Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Carex obnupta	75	Yes	OBL	Column Totals: (A) (B)
2. Holcus lanatus	20	Yes	FAC	
3. Lotus corniculatus	5	No	FAC	Prevalence Index = B/A =
4				Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				➤ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100	. <u> </u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	Cover	be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
	0	= Total C	Cover	Present? Yes X No
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est.	

Perton         Matrix         Redox Features         Loc'         Toture         Remarks           0 - 10         10YR 3/1         95         5YR 5/8         5         C         PL,M         SiLo         Silt loam           10 - 14         10YR 3/1         92         5YR 5/8         8         C         PL,M         SiLo         Silt loam           10 - 14         10YR 3/1         92         5YR 5/8         8         C         PL,M         SiLo         Silt loam           10 - 14         10YR 3/1         92         5YR 5/8         8         C         PL,M         Silt loam           10 - 14         10YR 3/1         92         5YR 5/8         8         C         PL,M         Silt loam           10 - 14         10YR 3/1         92         5YR 5/8         8         C         PL,M         Silt loam           10 - 14         10YR 3/1         92         5YR 5/8         8         C         PL,M         Silt loam           11         10 - 10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10	Profile Desc	ription: (Describ	be to the o	lepth ne	eded to docu	nent the i	ndicator	or conf	irm the	e absence	e of indicators.)
0-10         10YR 3/1         95         5YR 5/8         5         C         PL,M         Sile         Sile           10-14         10YR 3/1         92         5YR 5/8         8         C         PL,M         Sile         Sil	Depth	Matrix			Redo	x Feature	<u>s</u>				
10 - 14       10YR 3/1       92       5YR 5/8       8       C       PL,M       SiLo       Silt loam         Image: Silt of the state of					· · · · ·	%			_		
Type: C=Concentration.D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       *Location: PL=Pore Lining, M=Matrix, Hydric Soil Indicators for Problematic Hydric Soils*:         Hydric Soil Indicators: (Applicable to al LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils*:         Histic Epipote (A2)       Struped Matrix (S6)       2 cm Mack (A10)         Histic Epipote (A2)       Commy Mucky Mineral (F1) (except MLRA 1)       Other (Explain in Remarks)         Hydric Soil Mide (A4)       Loamy Mucky Mineral (F2)       Other (Explain in Remarks)         Hydric Soil Strafec (A11)       Depleted Dark Surface (F7)       Indicators of hydrophylic wegetation and wetland hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Indicators of hydrophylic wegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Lager (If prosent):       Trype: Sande (Lawa G8) (except MLRA 1)       Hydric Soil Present? Yes 🗵 No [         Remarks:       Hydric Soil Oriteria met through indicator F6.       Hydric Soil Present? Yes ⊠ No [         Wetland Hydrology Indicators:       Indicators (B11)       Drainage Patterns (B10)         Hydrice Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)         Watard Hydrology Indicators:       Indicators (B11)       Drainage Patterns (B10) (MLRA 1, 2, 1, 2, 4, ad 48)       A and 49)	0 - 10	10YR 3/1	95	5Y	R 5/8	5	C	PL,M	Si	iLo	Silt loam
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A	10 - 14	10YR 3/1	92	5Y	R 5/8	8	С	PL,M	Si	iLo	Silt loam
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A							·				·
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A							·				
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils?:         Histic Epideon (A2)       Sandy Redox (S5)       C m Muck (A10)         Histic Epideon (A2)       Sandy Redox (S5)       Red Parent Material (TF2)         Histic Epideon (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sufface (A11)       Depleted Matrix (F3)       Indicators of hydrophylic vegetation and wetland hydrology muck persent, unless disturbed or problematic.         Restrictive Layer (If present):       Type: Monte Surface (A12)       Redox Depressions (F8)       Indicators (2 or more required)         Beptet data       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       Hydric Soil Present? Yes INo       Redox Present?         Depth (inches): N/A       Redox Pares Sandy Mucky Minerai (S1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)       Hydric Soil Present? Yes INo         Remarks:       Hydric Soil Criteria met through indicator F6.       Secondary Indicators (2 or more required)       High Water Table (A2)       1, 2, 4A, and 4B)       Hydric A (A)         Surface Water (A1)       Image Patterns (B10)       Dry-Season Water Table (A2)       Dry-Season Water Table (A2)       Hydric Soil Crici (S1)       Saturation Visible on A											
Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Hydrogen Sulfide (A4)       Loarmy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Depleted Below Dark Surface (A12)       Redox Dark Surface (FF)       **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (If present):       Type: None       unless disturbed or problematic.         Perth (inches): N/A       Hydric Soil Present? Yes No       No         Remarks:       Hydric Soil Present? Yes (B) (MLRA 1, 2, 4, and 4B)       Secondary Indicators (2 or more required)         Stardace Water (A1)       Water-Stained Leaves (B9) (except MLRA 4, and 4B)       Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B)         Saturation (A3)       Sati Crust (B11)       Drainage Patterns (B10)       Dy-Saceson Water Table (C2)         Bide Marks (B1)       Aquatic Invertebrates (B13)       Dy-Saceson Water Table (C2)       Sceomodary Landor Moultard (D3)         Bide Mater Crust (B4)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)       Dy-Saceson Water Table (C2)         Jaga Mat or Crust (B4)       Presence of Studed Odr (C1)       <								ed Sand	Grains		
□       Istripped Matrix (S6)       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □ <td></td> <td></td> <td>licable to</td> <td></td> <td></td> <td></td> <td>ea.)</td> <td></td> <td></td> <td></td> <td>-</td>			licable to				ea.)				-
□ Black Histic (A3)       □ cormy Mucky Mineral (F1) (except MLRA 1)       □ Very Shallow Dark Surface (TF12)         □ Hydrogen Suffide (A4)       □ cormy Gieyed Matrix (F2)       □ Other (Explain in Remarks)         □ Depleted Below Dark Surface (A11)       □ Depleted Matrix (F2)       □ Other (Explain in Remarks)         □ Thick Dark Surface (A12)       ☑ Redox Dark Surface (F6)       ³Indicators of hydrophytic vegetation and wetland hydrology must be present,         □ Sandy Gleyed Matrix (F3)       □ Depleted Dark Surface (F7)       wetland hydrology must be present,         □ Sandy Gleyed Matrix (F3)       □ Redox Dark Surface (F7)       unless disturbed or problematic.         Restrictive Layer (if present):       Type, None       Hydric Soil Present?       Yes ⊠ No □         Remarks:         Hydric soil criteria met through indicator F6.       Hydric Soil Present?       Yes ⊠ No □         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         □ Surface Water (A1)       □ Water-Stained Leaves (B9) (except MLRA       4A, and 4B)         □ Sutrace Matrix (B1)       □ cainage Patterns (B10)       □ cainage Patterns (B10)         □ Sutrace N(A3)       □ Saturation Visible on Aerial Imagery (C9)       □ Saturation Visible on Aerial Imagery (C9)         □ Drift Deposits (B3)       □ Oxidized Rhizospheres along Living Roots (C3)       © Geomorphic Posi		· · /				-					
□       Hydrogen Sulfide (A4)       □       Decamy Gleyed Matrix (F2)       □       Other (Explain in Remarks)         □       Depleted Below Dark Surface (A12)       □       Depleted Matrix (F3) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         □       Sandy Mucky Mineral (S1)       □       Depleted Dark Surface (F7)       unless disturbed or problematic.         □       Restrictive Layer (If present):						. ,			1)		
□ Depleted Below Dark Surface (A11)       □ Depleted Matrix (F3)       □ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         □ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         □ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)       unless disturbed or problematic.         ■ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)       unless disturbed or problematic.         ■ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)       unless disturbed or problematic.         ■ Restrictive Layer (If present):       Type: Mone       Hydric Soil Present? Yes IN o         □ Depth (inches):       N/A       Hydric Soil Criteria met through indicator F6.         HYDROLOGY       ■       Wetland Hydrology Indicators (2 or more required)         □ Surface Water (A1)       □ Water-Stained Leaves (B9) (except MLRA       A A and 4B)         □ High Water Table (A2)       1, 2, 4A, and 4B       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Saturation (A3)       □ Saturation (A3)       □ Drainage Patterns (B10)         □ Water Marks (B1)       □ Aquatic Invertebrates (B13)       □ Dry-Season Water Table (C2)         □ Stiff Deposits (B3)       □ Oxidized Rhizospheres along Living Roots (C3)       □ Geomorphic Position (D2)         □ Driff Depo		. ,			• •	•			•)	-	
□       Thick Dark Surface (A12)       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □       □<			ace (A11)		• •		)				
□ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present): Type: None Depth (inches): N/A       Hydric Soil Present?       Yes ⊠ No □         Remarks:       Hydric soil criteria met through indicator F6.         Wetland Hydrology Indicators:       Secondary Indicators (2 or more required)         □ Surface Water (A1)       □ 1,2,4A, and 4B)       4A, and 4B)         ■ Saturation (A3)       □ Salt Crust (B1)       □ Drainage Patterns (B10)         □ Water Marks (B1)       □ Aquatic Invertebrates (B13)       □ Dry-Season Water Table (C2)         □ brift Deposits (B3)       □ Oxidized RRizospheres along Living Roots (C3)       ③ Geomorphic Position (D2)         □ brift Deposits (B5)       □ Recent Iron Reduction in Tilled Soils (C6)       ☑ FAC-Neutral Test (C5)         □ Sutrace Soil Cracks (B6)       □ Sturated or Stressed Plants (D1) (LRR A)       □ Raised Ant Mounds (D6) (LRR A)         □ Inon Deposits (B5)       □ Recent Iron Reduction in Tilled Soils (C6)       ☑ FAC-Neutral Test (C5)         □ Sutrace Soil Cracks (B6)       □ Stunted or Stressed Plants (D1) (LRR A)       □ Raised Ant Mounds (D6) (LRR A)         □ Inon Deposits (B5)       □ Depth (inches): None       □ Raised Ant Mounds (D6) (LRR A)         □ Surface Soil Cracks (B6)       □ Stunted or Stressed Plants (D1) (LRR A)       □ Raised Ant M	— ·									<sup>3</sup> Indicate	ors of hydrophytic vegetation and
□ Sandy Gleyed Matrix (S4)       □ Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present): Type: None Depth (inches): N/A       Hydric Soil Present? Yes ☑ No □         Remarks:       Hydric soil criteria met through indicator F6.         Wetland Hydrology Indicators:       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       □ Water-Stained Leaves (B9) (except MLRA       □ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Gaturation (A3)       □ Salt Crust (B11)       □ Drainage Patterns (B10)         Water Marks (B1)       □ Aquatic Invertebrates (B13)       □ Dry-Season Water Table (C2)         Sediment Deposits (B2)       □ Hydrogen Sulfide Odor (C1)       □ Saturation (Visible on Aerial Imagery (C9)         □ Drift Deposits (B3)       □ Oxidized Rhizospheres along Living Roots (C3)       ⊠ Geomorphic Position (D2)         □ Agal Mat or Crust (B4)       □ Presence of Reduced Iron (C4)       □ Shallow Aquitard (D3)         □ Iron Deposits (B5)       □ Sturted or Stressed Plants (D1) (LRR A)       □ Raised Ant Mounds (D6) (LRR A)         □ Inundation Visible on Aerial Imagery (B7)       ○ Uther (Explain in Remarks)       □ Frost-Heave Hummocks (D7)         □ Sparsely Vegetated Concave Surface (B8)       □ Depth (inches): None       □ Wetlan		. ,				. ,	7)				
Type: None       Hydric Soil Present? Yes No         Depth (inches): N/A       Hydric Soil Present? Yes No         Remarks:       Hydric soil criteria met through indicator F6.         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Field Observations:       Surface Water Present?       Yes No Depth (inches): None         Surface Present?       Yes       No Depth (inches): None <td< td=""><td></td><td></td><td></td><td></td><td>Redox Depress</td><td>ions (F8)</td><td></td><td></td><td></td><td></td><td></td></td<>					Redox Depress	ions (F8)					
Depth (inches): N/A       Hydric Soil Present?       Yes X       No         Remarks:         Hydric soil criteria met through indicator F6.         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Saturation (A3)       1, 2, 4A, and 4B)       Water-Stained Leaves (B9) (except MLRA         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Sati Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Dift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Cecemorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         I ron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Sufface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         I nundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Seaturation Present?       Yes No			:								
Remarks:         Hydric soil criteria met through indicator F6.         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Dift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Secondary Indicators (Present? Yes No X Depth (inches): None       None					-						
Hydric soil criteria met through indicator F6.         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Sturateor Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (K7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Conca	Depth (ind	ches): <u>N/A</u>							н	lydric Soi	l Present? Yes 🗵 No 🗌
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Secomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Secondary Present?       Yes       No X         Field Observations:       Yes       No X       Depth (inches): None       Wet	Remarks:										
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Secomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Secondary Present?       Yes       No X         Field Observations:       Yes       No X       Depth (inches): None       Wet	Hydric soil	criteria met th	rough in	dicator	<sup>.</sup> F6.						
Wetland Hydrology Indicators:       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Se Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Surface Water Present?       Yes       No         Water Table Present?       Yes       No       Depth (inches): None       Wetland Hyd	•		0								
Wetland Hydrology Indicators:       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Se Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Surface Water Present?       Yes       No         Water Table Present?       Yes       No       Depth (inches): None       Wetland Hyd											
Wetland Hydrology Indicators:       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Se Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Surface Water Present?       Yes       No         Water Table Present?       Yes       No       Depth (inches): None       Wetland Hyd		GY									
Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA         High Water Table (A2)       1, 2, 4A, and 4B)         Saturation (A3)       Salt Crust (B11)         Water Marks (B1)       Aquatic Invertebrates (B13)         Drift Deposits (B2)       Hydrogen Sulfide Odor (C1)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)         Innundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)         Sparsely Vegetated Concave Surface (B8)         Field Observations:         Surface Water Present?       Yes         Yes       No X         Depth (inches):       None         Water Table Present?       Yes       No X         Depth (inches):       None         Water Table Present?       Yes       No X         Depth (inches):       None											
Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       K Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Sparsely Vegetated Concurve Surface (B8)       Depth (inches): None       Frede Observations:         Surface Water Present?       Yes       No K       Depth (inches): None         Water Table Present?       Yes       No K       Depth (inches): None         Saturation Present?       Yes       No K       Depth (inches): None											
High Water Table (A2) 1, 2, 4A, and 4B)   Saturation (A3) Salt Crust (B11)   Water Marks (B1) Aquatic Invertebrates (B13)   Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)   Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3)   Algal Mat or Crust (B4) Presence of Reduced Iron (C4)   Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6)   Surface Soil Cracks (B6) Stuned or Stressed Plants (D1) (LRR A)   Inundation Visible on Aerial Imagery (B7)   Other (Explain in Remarks)   Field Observations:   Surface Water Present?   Yes   No X   Depth (inches):   None   Water Table Present?   Yes   Yes   No X   Depth (inches):   None   Water Table Present?   Yes   Yes   No X   Depth (inches):   None   Water Table Present?   Yes   No X				incu, cri			(P0) ( <b>a</b>	voont M			
Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Depth (inches): None       Depth (inches): None         Water Table Present?       Yes       No ⊠       Depth (inches): None         Water Table Present?       Yes       No ⊠       Depth (inches): None         Saturation Present?       Yes       No ⊠       Depth (inches): None         Saturation Present?       Yes       No ⊠       Depth (inches): None		· · ·						xcept w	LKA		
Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Depth (inches): None       No         Water Table Present?       Yes       No ⊠       Depth (inches): None         Water Table Present?       Yes       No ⊠       Depth (inches): None         Saturation Present?       Yes       No ⊠       Depth (inches): None							)				
Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Depth (inches): None       Depth (inches): None         Water Table Present?       Yes       No X       Depth (inches): None         Saturation Present?       Yes       No X       Depth (inches): None	<b>—</b>				=	· /	(D12)			_	0 ( )
□ Drift Deposits (B3)       □ Oxidized Rhizospheres along Living Roots (C3)       ⊠ Geomorphic Position (D2)         □ Algal Mat or Crust (B4)       □ Presence of Reduced Iron (C4)       □ Shallow Aquitard (D3)         □ Iron Deposits (B5)       □ Recent Iron Reduction in Tilled Soils (C6)       ☑ FAC-Neutral Test (D5)         □ Surface Soil Cracks (B6)       □ Stunted or Stressed Plants (D1) (LRR A)       □ Raised Ant Mounds (D6) (LRR A)         □ Inundation Visible on Aerial Imagery (B7)       □ Other (Explain in Remarks)       □ Frost-Heave Hummocks (D7)         □ Sparsely Vegetated Concave Surface (B8)       □ Depth (inches): None       □         Water Table Present?       Yes □ No ☑       Depth (inches): None       Wetland Hydrology Present? Yes ☑ No ☑         Saturation Present?       Yes □ No ☑       Depth (inches): None       Wetland Hydrology Present? Yes ☑ No □		. ,					. ,				•
Algal Mat or Crust (B4)       □       Presence of Reduced Iron (C4)       □       Shallow Aquitard (D3)         □       Iron Deposits (B5)       □       Recent Iron Reduction in Tilled Soils (C6)       ☑       FAC-Neutral Test (D5)         □       Surface Soil Cracks (B6)       □       Stunted or Stressed Plants (D1) (LRR A)       □       Raised Ant Mounds (D6) (LRR A)         □       Inundation Visible on Aerial Imagery (B7)       □       Other (Explain in Remarks)       □       Frost-Heave Hummocks (D7)         □       Sparsely Vegetated Concare Surface (B8)       □       Depth (inches): None       □       Frost-Heave Hummocks (D7)         Surface Water Present?       Yes □       No ☑       Depth (inches): None       □       Explain In Remarks)       □       Explain In Remarks)         Saturation Present?       Yes □       No ☑       Depth (inches): None       □       Explain In Remarks)       □       Explain In Remarks)       □         Saturation Present?       Yes □       No ☑       Depth (inches): None       □       Explain In Remarks)       □       Explain Hydrology Present? Yes ☑ No □					_ • •		• •	Living D	aata ((		<b>3311</b>
□ Iron Deposits (B5)       □ Recent Iron Reduction in Tilled Soils (C6)       ▼ FAC-Neutral Test (D5)         □ Surface Soil Cracks (B6)       □ Stunted or Stressed Plants (D1) (LRR A)       □ Raised Ant Mounds (D6) (LRR A)         □ Inundation Visible on Aerial Imagery (B7)       □ Other (Explain in Remarks)       □ Frost-Heave Hummocks (D7)         □ Sparsely Vegetated Concave Surface (B8)       □ Depth (inches): None       □ Depth (inches): None         Surface Water Present?       Yes □ No ⊠       Depth (inches): None         Water Table Present?       Yes □ No ⊠       Depth (inches): None         Saturation Present?       Yes □ No ⊠       Depth (inches): None							-	-	0015 (1	·	1 ( )
□       Surface Soil Cracks (B6)       □       Stunted or Stressed Plants (D1) (LRR A)       □       Raised Ant Mounds (D6) (LRR A)         □       Inundation Visible on Aerial Imagery (B7)       □       Other (Explain in Remarks)       □       Frost-Heave Hummocks (D7)         □       Sparsely Vegetated Concare Surface (B8)       □       Depth (inches): None       □       Frost-Heave Hummocks (D7)         Field Observations:       Surface Water Present?       Yes □       No ⊠       Depth (inches): None       □         Water Table Present?       Yes □       No ⊠       Depth (inches): None       Wetland Hydrology Present?       Yes ⊠       No □		. ,					-	-	<b>C</b> (6)		
□ Inundation Visible on Aerial Imagery (B7)       □ Other (Explain in Remarks)       □ Frost-Heave Hummocks (D7)         □ Sparsely Vegetated Concave Surface (B8)       □       Frield Observations:       □         Surface Water Present?       Yes □       No ☑       Depth (inches): None       □         Water Table Present?       Yes □       No ☑       Depth (inches): None       □         Saturation Present?       Yes □       No ☑       Depth (inches): None       Wetland Hydrology Present? Yes ☑       No □	-							`	,		
□ Sparsely Vegetated Concave Surface (B8)         Field Observations:         Surface Water Present?       Yes □       No ⊠       Depth (inches): None         Water Table Present?       Yes □       No ⊠       Depth (inches): None         Saturation Present?       Yes □       No ⊠       Depth (inches): None    Wetland Hydrology Present? Yes ☑ No □	<b>—</b> · · ·	. ,	Imagen	(B7)					A)		
Field Observations:       Ves       No X       Depth (inches):       None         Surface Water Present?       Yes       No X       Depth (inches):       None         Water Table Present?       Yes       No X       Depth (inches):       None         Saturation Present?       Yes       No X       Depth (inches):       None    Wetland Hydrology Present? Yes X No I			0,	• •			illaiks)				Tost-fieave fidminocks (D7)
Surface Water Present?       Yes       No X       Depth (inches): None         Water Table Present?       Yes       No X       Depth (inches): None         Saturation Present?       Yes       No X       Depth (inches): None    Wetland Hydrology Present? Yes X No I				с (ВО)							
Water Table Present?       Yes       No X       Depth (inches): None       Wetland Hydrology Present?       Yes X       No I         Saturation Present?       Yes       No X       Depth (inches): None       Wetland Hydrology Present? Yes X       No I				No 🔽	Denth (inches	None					
Saturation Present? Yes No X Depth (inches): None Wetland Hydrology Present? Yes X No			_								
										ا معام ا	
(includes capitally imige)	(includes cap		res 🗌			-					gy Fresent? Tes 🖂 No 🗌

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

Remarks:

Wetland hydrology criteria met through secondary indicators D2 and D5.

Project/Site: 1244.0001 Jackson Highway	City/County: Cheha	alis / Lewis	_ Sampling Date: <u>7/12/19</u>		
Applicant/Owner: Puget Western, Inc.		State: WA	_ Sampling Point: DP-140		
Investigator(s): Kyla Caddey	Section, 7	Township, Range: <u>11 / 1</u>	3N / 02W		
Landform (hillslope, terrace, etc.): Valley Floor			ave Slope (%): 2		
Subregion (LRR): <u>A2</u>	Lat: 46.624927	Long: -122.902069	958		
Soil Map Unit Name: Reed silty clay loam		NWI classific	cation: N/A		
Are climatic / hydrologic conditions on the site typical for this tir	ne of year? Yes 🗌 No 🗵	(If no, explain in Remarks.			
Are Vegetation, Soil, or Hydrology signific	antly disturbed? Are "N	Normal Circumstances" pre	esent? Yes 🗵 No 🗌		
Are Vegetation, Soil, or Hydrology naturall	y problematic? (If nee	ded, explain any answers	in Remarks.)		
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present?       Yes ⋈ No □         Hydric Soil Present?       Yes ⋈ No □         Wetland Hydrology Present?       Yes ⋈ No □	Is the Sample within a Wetla		No 🗌		

Remarks: All three wetland criteria met. Data collected in Wetland Y. Precipitation was slightly below average at 61 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 2	(A)
2				Total Number of Dominant	
3					(B)
4				<u></u>	(2)
T		= Total C	over	Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 30 ft)	<u> </u>	- 10tai C	OVEI	That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
1,				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
				OBL species         x 1 =	
3				FACW species x 2 =	
4		·		· · · · · · · · · · · · · · · · · · ·	_
5		·		FAC species x 3 =	
Herb Stratum (Plot size: 10 ft)	0	= Total C	over	FACU species x 4 =	
1 Ranunculus repens	30	Yes	FAC	UPL species x 5 =	
	15	Yes	FAC	Column Totals: (A)	_ (B)
2. Agrostis capillaris			FAC	Drevelance Index - D/A -	
3. Lotus corniculatus	5	No		Prevalence Index = B/A =	
4. Anthoxanthum odoratum	5	No	FACU	Hydrophytic Vegetation Indicators:	
5. Hypochaeris radicata	5	No	FACU	Rapid Test for Hydrophytic Vegetation	
6		·		☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide support	ing
9				data in Remarks or on a separate sheet)	
10				☐ Wetland Non-Vascular Plants <sup>1</sup>	
11		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	n)
····	60	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology n	nust
Woody Vine Stratum (Plot size: 30 ft)		- 10tai C	Over	be present, unless disturbed or problematic.	
1					
		·		Hydrophytic	
2	0	= Total C	over	Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum 40	<u> </u>		UVEI		
Remarks: Hydrophytic vegetation criteria met thre	ough dom	inonoc t	aat		
myorophytic vegetation criteria met thr	ougn aom	imance te	251.		

Depth (inches)       Matrix       Redox Features Color (moist)       %       Type1       Loc2       Texture       Remarks         0 - 11       10YR 3/1       95       5YR 3/4       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       Silo       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       Silo       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       Silo       Silo       <							
0 - 11 11 - 16       10YR 3/1       95 5YR 3/4       5YR 3/4       5 C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         10YR 4/1       10YR 4/6       10       C       PL,M       SiLo       Silt loam         10YR 4/1       10YR 4/6       10       C       PL,M       SiLo       Silt loam         10YR 4/2       10       10YR 4/1       10       C       PL,M       SiLo       Silt loam         11       10       Salt sitt site site       10       Salt site site       Silt site site       Silt site site         11       Sandy Redox (S5)       Indicators for Problematic Hydric Soils <sup>2</sup> :							
11 - 16       10YR 4/1       80       5YR 3/4       10       C       PL,M       SiLo       Silt loam         10YR 4/6       10       C       PL,M       SiLo       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       SiLo       Silt loam         10YR 4/6       10       C       PL,M       SiLo       Silt loam       Silt loam         11 - 16       10YR 4/6       10       C       PL,M       SiLo       Silt loam         10       10YR 4/6       10       C       PL,M       SiLo       Silt loam         10       10       10       C       PL,M       SiLo       Silt loam         10       10       10       C       PL,M       Silo       Silt loam         10       10       10       10       Indicators       PL-Pore Lining, M=Matrix.         Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Ind							
IOYR 4/6       10       C       PL,M       SiLo       Silt loam         Image: Silt Indicators:       Silt Indicators:       Silt Indicators:       Silt Indicators:       PL,M       Silt Inditators:       Silt Indicators:							
'Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histosol (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Expleted Below Dark Surface (A11)       Depleted Matrix (F3)       3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       Unless disturbed or problematic.         Depth (inches): N/A       Hydric Soil Present? Yes No       No							
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       unless disturbed or problematic.         Depth (inches):       N/A       No _         Remarks:       Hydric Soil Present? Yes X No _							
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       unless disturbed or problematic.         Depth (inches):       N/A       No _         Remarks:       Hydric Soil Present? Yes X No _							
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       unless disturbed or problematic.         Depth (inches):       N/A       No _         Remarks:       Hydric Soil Present? Yes X No _							
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       unless disturbed or problematic.         Depth (inches):       N/A       No _         Remarks:       Hydric Soil Present? Yes X No _							
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       unless disturbed or problematic.         Depth (inches):       N/A       No _         Remarks:       Hydric Soil Present? Yes X No _							
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       unless disturbed or problematic.         Depth (inches):       N/A       No _         Remarks:       Hydric Soil Present? Yes X No _							
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       unless disturbed or problematic.         Depth (inches):       N/A       No _         Remarks:       Hydric Soil Present? Yes X No _							
□       Histosol (A1)       □       Sandy Redox (S5)       □       2 cm Muck (A10)         □       Histic Epipedon (A2)       □       Stripped Matrix (S6)       □       Red Parent Material (TF2)         □       Black Histic (A3)       □       Loamy Mucky Mineral (F1) (except MLRA 1)       □       Very Shallow Dark Surface (TF12)         □       Hydrogen Sulfide (A4)       □       Loamy Gleyed Matrix (F2)       □       Other (Explain in Remarks)         ☑       Depleted Below Dark Surface (A11)       □       Depleted Matrix (F3)       □       Other (Explain in Remarks)         ☑       Depleted Below Dark Surface (A12)       ☑       Redox Dark Surface (F6)       ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         ☑       Sandy Gleyed Matrix (S4)       □       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Type: None							
Histic Epipedon (A2)       Stripped Matrix (S6)       Red Parent Material (TF2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       No         Depth (inches):       N/A       No							
Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Indicators of hydrophytic vegetation and         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present,         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):         Type: None       Depth (inches): N/A         Depth (inches):       N/A							
□       Hydrogen Sulfide (A4)       □       Loamy Gleyed Matrix (F2)       □       Other (Explain in Remarks)         □       Depleted Below Dark Surface (A11)       □       Depleted Matrix (F3)       □       Other (Explain in Remarks)         □       Thick Dark Surface (A12)       ☑       Redox Dark Surface (F6)       ³Indicators of hydrophytic vegetation and         □       Sandy Mucky Mineral (S1)       □       Depleted Dark Surface (F7)       wetland hydrology must be present,         □       Sandy Gleyed Matrix (S4)       □       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):         Type:       NOne         Depth (inches):       N/A         Hydric Soil Present? Yes ☑ No □         Remarks:							
Image: Second Strict Strin Strict Strict Strin Strict Strict Strict Strict Strict Strict S							
□ Thick Dark Surface (A12)       Image: Redox Dark Surface (F6)       3 Indicators of hydrophytic vegetation and         □ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)       wetland hydrology must be present,         □ Sandy Gleyed Matrix (S4)       □ Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       Hydric Soil Present?       Yes Image: No □         Remarks:       Image: None       No □       Image: None       Image: None         Depth (inches):       N/A       Image: None       Yes Image: Non □							
Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       Hydric Soil Present?       Yes X       No         Remarks:       Remarks:       Kestrictive Layer (Kestrictive Layer (Kestrictite Layer (Kestrictive Layer (Kestrictite Layer (Kestrict							
Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (if present):       Type: None       Hydric Soil Present?       Yes X       No          Depth (inches):       N/A       No        Kemarks:       Kester Soil Present?       Yes X       No							
Restrictive Layer (if present):         Type: None         Depth (inches): N/A         Hydric Soil Present?         Yes X         No C							
Type: None       Depth (inches): N/A       Remarks:							
Depth (inches): N/A     Hydric Soil Present?     Yes X     No        Remarks:							
Remarks:							
Hydric soil criteria met through indicators A11 and F6.							
HYDROLOGY							
Wetland Hydrology Indicators:							
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)							
Surface Water (A1)       Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9) (MLRA 1, 2,         Ligh Water-Table (A2)       1.2 40 and 4B)       40 and 4B)							
High Water Table (A2)         1, 2, 4A, and 4B)         4A, and 4B)							
Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)							
Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)							
Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)							
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)							
X Algal Mat or Crust (B4)							
□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5)							
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)							
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)							
Sparsely Vegetated Concave Surface (B8)							
Field Observations:							
Field Observations:							
Field Observations:         Surface Water Present?       Yes       No X       Depth (inches): None         Water Table Present?       Yes       No X       Depth (inches): None         Saturation Present?       Yes       No X       Depth (inches): None    Wetland Hydrology Present? Yes X No I							
Field Observations:         Surface Water Present?       Yes       No X       Depth (inches):       None         Water Table Present?       Yes       No X       Depth (inches):       None         Saturation Present?       Yes       No X       Depth (inches):       None         (includes capillary fringe)       Yes       No X       Depth (inches):       None							
Field Observations:         Surface Water Present?       Yes       No X       Depth (inches): None         Water Table Present?       Yes       No X       Depth (inches): None         Saturation Present?       Yes       No X       Depth (inches): None    Wetland Hydrology Present? Yes X No I							
Field Observations:         Surface Water Present?       Yes       No X       Depth (inches):       None         Water Table Present?       Yes       No X       Depth (inches):       None         Saturation Present?       Yes       No X       Depth (inches):       None         (includes capillary fringe)       Yes       No X       Depth (inches):       None							

Project/Site: 1244.0001 Jackson Highway City/	County: Chehalis / Lewis Sampling Date: 7/12/19				
Applicant/Owner: Puget Western, Inc.	State: WA Sampling Point: DP-141				
Investigator(s): Kyla Caddey	Section, Township, Range: <u>11 / 13N / 02W</u>				
Landform (hillslope, terrace, etc.): Valley Floor Loc	cal relief (concave, convex, none): <u>Concave</u> Slope (%): <u>2</u>				
Subregion (LRR): <u>A2</u> Lat: <u>46.625</u>	028 Long: -122.90222314 Datum: WGS 84				
Soil Map Unit Name: Reed silty clay loam	NWI classification: N/A				
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 disturbe	ed? Are "Normal Circumstances" present? Yes ⊠ No □				
Are Vegetation, Soil, or Hydrology naturally problematic	c? (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 🛛 No 🗌					
Hydric Soil Present? Yes 🗵 No 🗌	Is the Sampled Area within a Wetland? Yes ⊠ No □				
Wetland Hydrology Present? Yes 🗙 No 🗌					

Remarks: All three wetland criteria met. Data collected in Wetland E. Precipitation was slightly below average at 61 percent of normal.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 2	(A)
2				Total Number of Dominant	
3				-	(B)
4				Demonstrat Demoissant Operation	
	0	= Total C	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					()
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Juncos effusus	30	Yes	FACW	Column Totals: (A)	
2. Phalaris arundinacea	20	Yes	FACW		_ (=)
3. Agrostis capillaris	10	No	FAC	Prevalence Index = B/A =	
4. Lotus corniculatus	10	No	FAC	Hydrophytic Vegetation Indicators:	
5. Ranunculus repens	8	No	FAC	☑ Rapid Test for Hydrophytic Vegetation	
6. Holcus lanatus	8	No	FAC	☑ Dominance Test is >50%	
7. Hypochaeris radicata	2	No	FACU	□ Prevalence Index is ≤3.0 <sup>1</sup>	
8 Schedonorus arundinaceus	2	No	FAC	Morphological Adaptations <sup>1</sup> (Provide support	tina
9. Dactylis glomerata	2	No	FACU	data in Remarks or on a separate sheet)	
				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11	92			<sup>1</sup> Indicators of hydric soil and wetland hydrology r	must
Woody Vine Stratum (Plot size: 30 ft)	92	= Total C	Cover	be present, unless disturbed or problematic.	
,					
1				Hydrophytic	
2	0	= Total C		Vegetation Present? Yes X No	
% Bare Ground in Herb Stratum 8	<u> </u>	- Total C	over		
Remarks:				1	
Hydrophytic vegetation criteria met thro	bugh rapi	a test			

Profile Description	n: (Describe	to the de	pth ne	eded to docur	nent the i	ndicator	or confirm	n the abs	ence of indicators.)						
Depth	Matrix		-		x Feature										
(inches) Color	<u>(moist)</u>	%	Color	(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks						
<u>0-9</u> 10Y	′R 3/1	93	5YF	R 3/4	7	С	PL,M	SiLo	Silt loam						
9 - 16 10Y	′R 4/1	80	5YF	R 3/4	10	С	PL,M	SiLo	Silt loam						
			10Y	'R 4/6	10	С	PL,M	SiLo	Silt loam						
						·									
						·									
						·									
						·									
						·									
						. <u> </u>									
<sup>1</sup> Type: C=Concent	ration, D=Dep	letion, RM	∕l=Redι	iced Matrix, CS	S=Covered	d or Coate	ed Sand Gr	rains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.						
Hydric Soil Indica	tors: (Applica	able to a	ll LRRs	, unless othe	rwise not	ed.)		Inc	licators for Problematic Hydric Soils <sup>3</sup> :						
Histosol (A1)				andy Redox (S					2 cm Muck (A10)						
Histic Epipedor				tripped Matrix	· /				Red Parent Material (TF2)						
Black Histic (A				oamy Mucky M			MLRA 1)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)						
<ul> <li>Hydrogen Sulfie</li> <li>Depleted Belov</li> </ul>		(A11)		oamy Gleyed Nepleted Matrix					Other (Explain in Remarks)						
Thick Dark Sur		, (, (, i, i))		•	. ,			<sup>3</sup> In	dicators of hydrophytic vegetation and						
□ Thick Dark Surface (A12)       Image: Redox Dark Surface (F6)       3 Indicators of hydrophytic vegetation and wetland hydrology must be present,         □ Sandy Mucky Mineral (S1)       □ Depleted Dark Surface (F7)       wetland hydrology must be present,															
Sandy Gleyed	. ,		🗆 R	edox Depressi	ions (F8)				unless disturbed or problematic.						
Restrictive Layer	(if present):														
Type: None	N1/A														
Depth (inches):	Depth (inches): N/A Hydric Soil Present? Yes 🗵 No 🗌														
Remarks:															
Hydric soil criter	ria met throu	ugh indi	icators	s F3 and F6											
HYDROLOGY															
Wetland Hydrolog	y Indicators:														
Primary Indicators	(minimum of o	ne requir	ed; che	ck all that appl	y)				Secondary Indicators (2 or more required)						
Surface Water	(A1)			Water-Stai	ned Leave	es (B9) ( <b>e</b>	xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,						
High Water Tal	ole (A2)				A, and 4B)	)			4A, and 4B)						
Saturation (A3)				Salt Crust					Drainage Patterns (B10)						
☐ Water Marks (E	-			Aquatic Inv		. ,			Dry-Season Water Table (C2)						
Sediment Depo				Hydrogen :					Saturation Visible on Aerial Imagery (C9)						
Drift Deposits (	-			Oxidized R		-	-	ts (C3)	Seomorphic Position (D2)						
Algal Mat or Cr	. ,			Presence of Presence of Present line			-		Shallow Aquitard (D3)						
Iron Deposits (I	-			Recent Iro			``	,	FAC-Neutral Test (D5) Reised Apt Meunda (D6) (LBB A)						
Surface Soil Cr		nogony (E		Stunted or Other (Exp		-	1) ( <b>LRR A</b> )	)	<ul> <li>Raised Ant Mounds (D6) (LRR A)</li> <li>Frost-Heave Hummocks (D7)</li> </ul>						
Sparsely Veget			,			naiksj									
Field Observation		Ganade	(80)												
Surface Water Pres		es 🗌 N	lo 🗙	Depth (inches	<sub>s):</sub> None										
			·- 11												
	nt? V	es 🗖 🖪 N	JO 🔀	Depth (inches	s) None										
Water Table Prese			lo X Io X		·	<u> </u>	Weth								
	? Yo fringe)	es 🗌 🛛 N	lo 🗙	Depth (inches	<sub>s):</sub> None			-							

Remarks:

Wetland hydrology criteria met through secondary indicators D2 and D5.

Project/Site: 1244.0001 Jackson Highway		City/County	: Chehal	is / Lewis	Sampling	<sub>Date:</sub> 7/12/	'19
Applicant/Owner: Puget Western, Inc.				State: WA	Sampling	Point: DP-	142
				wnship, Range: <u>11 / ′</u>			
Landform (hillslope, terrace, etc.): Valley Floor						Slope (%	): 1
Subregion (LRR): <u>A2</u>		-		Long: -122.90208			
Soil Map Unit Name: Reed silty clay loam				NWI classif			
Are climatic / hydrologic conditions on the site typic							
Are Vegetation, Soil, or Hydrology	-			ormal Circumstances" p			
Are Vegetation, Soil, or Hydrology				ed, explain any answers			
SUMMARY OF FINDINGS – Attach site	e map showing	sampling	g point le	ocations, transect	s, importa	int feature	es, etc.
Hydrophytic Vegetation Present? Yes	No 🗵	la th		A			
Hydric Soil Present? Yes 🗵			e Sampled				
Wetland Hydrology Present? Yes	No 🗙	with	n a Wetlar	nd? Yes 🗌	No 🗵		
Not all three wetland criteria met; on Precipitation was slightly below avera VEGETATION – Use scientific names of	age at 61 percent of		llected in u	Ipland location betwee	en Wetlands J	E and Y.	
	Absolute	Dominant	Indicator	Dominance Test wo	rkshoot.		
Tree Stratum (Plot size: <u>30 ft</u> )		Species?		Number of Dominant			
1				That Are OBL, FACW		1	(A)
2				Total Number of Dom	inant		
3		·		Species Across All St	rata: <u>2</u>	2	(B)
4 Sapling/Shrub Stratum (Plot size: <u>30 ft)</u>	0	= Total Co	over	Percent of Dominant That Are OBL, FACW		50%	(A/B)
1				Prevalence Index we	orksheet:		
2				Total % Cover of	<u> </u>	Multiply by:	
3				OBL species	x 1 :	=	
4				FACW species	x 2 :	=	
5				FAC species	x 3	=	
	0	= Total Co	over	FACU species	x 4	=	
Herb Stratum (Plot size: <u>10 ft</u> )	50	Vaa		UPL species	x 5	=	_
1. Agrostis capillaris	50	Yes	FAC	Column Totals:	(A)		(B)
2. Anthoxanthum odoratum	<u> </u>	Yes	FACU	Provalanca Inde	$P_{\rm N} = R/\Lambda =$		
<ul> <li><u>3.</u> Holcus lanatus</li> <li><u>4.</u> Hypochaeris radicata</li> </ul>	10	<u>No</u> No	FAC FACU	Prevalence Inde			
5. Jacobaea vulgaris	5	No	FACU	Rapid Test for Hy			
6.				Dominance Test i			

7			Prevalence Inc	lex is ≤3.0¹	
8					is <sup>1</sup> (Provide supporting n a separate sheet)
10.			Wetland Non-\	/ascular Pl	ants <sup>1</sup>
11.			Problematic H	ydrophytic `	Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total Cover	<sup>1</sup> Indicators of hydri be present, unless		wetland hydrology must or problematic.
1			l huduo a hudio		
2			Hydrophytic Vegetation		
% Bare Ground in Herb Stratum 0	0	= Total Cover	Present?	Yes 🗌	No 🗵
Remarks: No hydrophytic vegetation criteria met.					
Prevalence Index not warranted due to		d lack of hydric so	il and hydrology	'-	

6.

Profile Desc	ription: (Descril	be to the d	epth ne	eded to docu	nent the	indicator	or confir	m the abse	ence of indicators.)
Depth	Matrix				x Feature				
(inches)	Color (moist)			r (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	<u>Remarks</u>
0 - 6	10YR 3/2	95	·	R 3/4	5	С	PL,M	SiLo	Silt loam
6 - 16	10YR 3/2	90	5YI	R 3/4	10	С	PL,M	SiLo	Silt loam
			·						
			·				. <u> </u>		
	oncentration, D=D	onlation P	M-Pod	ucod Matrix C	S-Covoro	d or Coat	od Sand G	raine	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (App								cators for Problematic Hydric Soils <sup>3</sup> :
Histosol (				Sandy Redox (S		,			2 cm Muck (A10)
	ipedon (A2)			Stripped Matrix	-				Red Parent Material (TF2)
Black His				_oamy Mucky N	. ,	1) ( <b>excep</b> t	MLRA 1)		Very Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed I		.)			Other (Explain in Remarks)
•	Below Dark Surfa	ace (A11)		Depleted Matrix				0.	
	rk Surface (A12)			Redox Dark Su	. ,				icators of hydrophytic vegetation and
	ucky Mineral (S1) leyed Matrix (S4)	)		Depleted Dark \$ Redox Depress	•	.7)			vetland hydrology must be present, Inless disturbed or problematic.
-	_ayer (if present)			Vedox Depress	10115 (1-0)				iness disturbed of problematic.
Type: NO									
	ches): <u>N/A</u>			-				Hydric	Soil Present? Yes 🗵 No 🗌
Remarks:								Tiyano	
	aritaria maat th	rough inc	liaatar	FC					
Hydric soli	criteria met th	rougn inc	licator	F0.					
HYDROLO	GY								
Wetland Hyd	drology Indicato	rs:							
Primary Indic	ators (minimum c	of one requi	red; che	eck all that appl	y)				econdary Indicators (2 or more required)
Surface \	Water (A1)			U Water-Stai	ned Leav	es (B9) ( <b>e</b>	xcept ML	RA [	Water-Stained Leaves (B9) (MLRA 1, 2,
High Wat	ter Table (A2)			1, 2, 4/	A, and 4B	5)			4A, and 4B)
Saturatio	n (A3)			Salt Crust	(B11)			C	] Drainage Patterns (B10)
Water Ma	arks (B1)			Aquatic Inv	/ertebrate	s (B13)		Ľ	Dry-Season Water Table (C2)
	t Deposits (B2)			Hydrogen	Sulfide Oo	dor (C1)		Ľ	Saturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized F	Rhizosphe	res along	Living Roo	ots (C3)	Geomorphic Position (D2)
	t or Crust (B4)					`	,		Shallow Aquitard (D3)
	osits (B5)			Recent Iro			``	,	FAC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or			1) ( <b>LRR A</b>	·) [	Raised Ant Mounds (D6) (LRR A)
	n Visible on Aeria			Other (Exp	lain in Re	marks)		Ľ	] Frost-Heave Hummocks (D7)
	Vegetated Conca	ave Surface	(B8)						
Field Observ					None				
Surface Wate			No 🗵	Depth (inches					
Water Table			No 🗵	Depth (inches					
Saturation Pr (includes cap		Yes 🗌	No 🔀	Depth (inches	s): <u>INONE</u>	)	Wet	land Hydro	ology Present? Yes 🗌 No 🗵
	corded Data (strea	am gauge, i	monitor	ing well, aerial	photos, pi	revious in	spections)	, if availabl	9:

Remarks:

Project/Site: 1244.0001 Jackson Highway	_City/County:	Chehalis / Lewis	Sam	pling Date: 7/12/19
Applicant/Owner: Puget Western, Inc.		State:	WA Sam	pling Point: DP-143
Investigator(s): Kyla Caddey	S	ection, Township, Ra	nge: <u>11 / 13N / 0</u>	2W
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): <u>1</u>
	.625787	Long: <u>-1</u>	22.90398490	Datum: WGS-84
Soil Map Unit Name: <u>Reed silty clay loam</u>			NWI classification:	
Are climatic / hydrologic conditions on the site typical for this time of yea	ar?Yes 🗌	No 🗵 (If no, explain	n in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly dis	sturbed?	Are "Normal Circur	nstances" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problem	ematic?	(If needed, explain a	any answers in Rem	arks.)
SUMMARY OF FINDINGS – Attach site map showing	ı sampling	point locations,	, transects, imp	ortant features, etc.
Hydrophytic Vegetation Present?       Yes □       No ⊠         Hydric Soil Present?       Yes ⊠       No □         Wetland Hydrology Present?       Yes □       No ⊠		Sampled Area a Wetland?	Yes 🗌 No 🛛	
Remarks: Not all three wetland criteria met; only hydric soils prese		•	tion between Wetla	nd F and Agricultural
Ditch 1. Precipitation was slightly below average at 61 pe	ercent of norr	nal.		

Absolute Dominant Indicator Dominance Test worksheet:	
Tree Stratum       (Plot size: 30 ft)       % Cover       Species?       Status         1.       Number of Dominant Species       That Are OBL, FACW, or FAC:       1	(A)
	(A)
2 Total Number of Dominant	
	B)
4 Percent of Dominant Species <u>0</u> = Total Cover That Are OBL, FACW, or FAC: <u>50%</u> (A	A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)	~,D)
1 Prevalence Index worksheet:	
2.	
3 OBL species x 1 =	
4 FACW species x 2 =	
5 FAC species x 3 =	
0 = Total Cover FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> ) UPL species x 5 =	
1. Anthoxanthum odoratum     40     Yes     FACU     Column Totals:     (A)	
2. Agrostis capillaris 30 Yes FAC	( )
3. Hypochaeris radicata 15 No FACU Prevalence Index = B/A =	
4. Schedonorus arundinaceus 8 No FAC Hydrophytic Vegetation Indicators:	
5 No FAC Rapid Test for Hydrophytic Vegetation	
6. Alopecurus pratensis 2 No FAC Dominance Test is >50%	
7 Prevalence Index is ≤3.0 <sup>1</sup>	
8 Display Barrier Morphological Adaptations <sup>1</sup> (Provide supportin	ıg
9 data in Remarks or on a separate sheet)	
	<b>、</b>
	,
<u>100</u> = Total Cover be present unless disturbed or problematic	ust
Woody Vine Stratum (Plot size: <u>30 ft</u> )	
1 Hydrophytic	
<sup>2</sup> Vegetation	
0     = Total Cover     Present?     Yes □     No ⊠	
Remarks: No hydrophytic vegetation criteria met.	
ואט וואטוטטוואווט אבקבומווטוו טוונדוומ ווובו.	

Profile Desc	cription: (Describ	e to the d	epth ne	eded to docu	ment the	indicator	r or con	firm	the ab	sence	of indicators.)
Depth	Matrix			Redo	ox Feature	es					
(inches)	Color (moist)	%	Colo	<u>r (moist)</u>	%	Type <sup>1</sup>	Loc <sup>2</sup>		Textu	re	Remarks
0 - 5	10YR 3/2	100			-		-		SiLo		Silt loam
5 - 10	10YR 3/2	95	7.5	YR 5/6	5	С	PL,N	Λ	SiLo		Silt loam
10 - 16	10YR 3/2	90	7.5	YR 5/6	10	С	PL,N	Л	SiLo		Silt loam
								<u> </u>			
	oncentration, D=De						ed Sano	d Gra			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	all LRR	s, unless othe	rwise no	ted.)			In	dicato	ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	. ,			Sandy Redox (	-						n Muck (A10)
	pipedon (A2)			Stripped Matrix		1) (					Parent Material (TF2)
☐ Black Hi ☐ Hydroge	n Sulfide (A4)			₋oamy Mucky N ₋oamy Gleyed I		, .		(1)		-	r Shallow Dark Surface (TF12) er (Explain in Remarks)
		ce (A11)		Depleted Matrix		-)			L		
□ Depleted Below Dark Surface (A11)       □ Depleted Matrix (F3)         □ Thick Dark Surface (A12)       ⊠ Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and								ors of hydrophytic vegetation and			
□ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) wetland hydrology must be present,							nd hydrology must be present,				
□ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) unless disturbed or problematic.											
	Layer (if present):										
· ·	Type: <u>None</u> Depth (inches): <u>N/A</u>										
	ches).								Hydr	ic Soil	Present? Yes 🗵 No 🗌
Remarks:											
Hydric soil	criteria met thr	ough inc	licator	F6.							
HYDROLO	GY										
Wetland Hy	drology Indicators	s:									
Primary Indi	cators (minimum of	one requi	red; che	eck all that app	ly)					Secor	ndary Indicators (2 or more required)
Surface	Water (A1)			U Water-Sta	ined Leav	res (B9) ( <b>e</b>	except N	MLR/	Α	ΟW	ater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)				A, and 4E	3)					4A, and 4B)
Saturation	Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)							rainage Patterns (B10)			
□ Water M				Aquatic In							ry-Season Water Table (C2)
	nt Deposits (B2)			Hydrogen							aturation Visible on Aerial Imagery (C9)
								1 ( )			
-	osits (B5)			Recent Iro				` '			AC-Neutral Test (D5)
	Soil Cracks (B6)	lue e crem d	רס	Stunted or		•	01) ( <b>LRF</b>	<b>~ A</b> )			aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aerial			Other (Exp	Diain in Re	emarks)				L Fr	rost-Heave Hummocks (D7)
Field Obser	Vegetated Concav	ve Sullace	; (00)				<u> </u>				
Surface Wat		Yes 🗌	No 🗙	Depth (inche	None	9					
Water Table			No 🗵	Depth (inches							
Saturation P				Depth (inches	,		14	Votia	nd Lu	Irology	y Present? Yes 🗌 No 🗵
Saturation P	iesent?		No 🗵	Debru (incue	s). <u> </u>	-	v	vetia	па нус	arolog	y Present? Yes 🗌 No 🗵

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

Remarks:

No wetland hydrology criteria met.

Project/Site: 1244.0001 Jackson Highway City/Col	untur Chehalis / Lewis	Sampling Date: 7/12/19
,		
Applicant/Owner: Puget Western, Inc.	State: WA	Sampling Point: DP-144
Investigator(s): Kyla Caddey	Section, Township, Range:	11 / 13N / 02W
Landform (hillslope, terrace, etc.): Valley Floor Local		Concave Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u> Lat: <u>46.62131</u>	6 Long: -122.9	0310059 Datum: WGS-84
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI d	classification: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	□ No 🗵 (If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed?	Are "Normal Circumstand	ces" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any ar	swers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing samp	ling point locations, tran	sects, important features, etc.
Hydric Soil Present? Yes 🛛 No 🗌	s the Sampled Area vithin a Wetland? Ye	es 🗌 No 🗙
Remarks: Not all three wetland criteria met; only hydric soils present. Date	a collected in an upland locatio	n between Wetland P and Agricultural

Not all three wetland criteria met; only hydric soils present. Data collected Ditch 5. Precipitation was slightly below average at 61 percent of normal.

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

Absolute       Dominant       Indicator         1.	
1.	
2.	
3.	3)
4 Percent of Dominant Species <u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> ) = Total Cover (A/4)	3)
$\underline{0} = \text{Total Cover}$	3)
Sapling/Shrub Stratum (Plot size: 30 ft)	3)
	- /
4 FACW species x 2 =	
5 FAC species x 3 = 0 = Total Cover FACU species x 4 =	
Approximation And Anthony FACIL	
1. Annovanitum odoradum         40         103         1700         Column Totals:         (A)         (I)           2. Hypochaeris radicata         30         Yes         FACU         Column Totals:         (A)         (I)	3)
3. Schedonorus arundinaceus 10 No FAC Prevalence Index = B/A =	
4 Alopecurus pratensis 5 No FAC Hydrophytic Vegetation Indicators:	
5 No FACU Rapid Test for Hydrophytic Vegetation	
6. Holcus lanatus 5 No FAC Dominance Test is >50%	
7. Unidentified forb* $5$ No FAC $\Box$ Prevalence Index is $\leq 3.0^{1}$	
data in Remarks or on a separate speet)	
9	
10 Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11 100 Total Cover	t
Woody Vine Stratum (Plot size: 30 ft)	
Hydropnytic	
2.           Vegetation           0         = Total Cover         Present?         Yes □         No ⊠	
% Bare Ground in Herb Stratum 0	
Remarks: Hydrophytic vegetation criteria not met. Prevalence Index not warranted due to combined lack of hydric soil a	nd

Hydrophytic vegetation criteria not met. Prevalence Index not warranted due to combined lack of hydric soil and hydrology. \*Unidentified forb species assumed FAC for scoring purposes.

Profile Dese	cription: (Descrit	be to the	depth n	eeded to docu	ment the	indicator	r or con	firm	the absenc	e of indicators.)
Depth	Matrix			Rede	ox Feature	<u>es</u>				
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		Texture	Remarks
0 - 5	10YR 3/2	100			-		-		SiLo	Silt loam
5 - 10	10YR 3/2	93	7.5	5/6 5/6	7	С	PL,N	Λ	SiLo	Silt loam
10 - 16	10YR 3/2	90	7.5	5YR 5/6	10	С	PL,N	Λ	SiLo	Silt loam
·							. <u> </u>			
							. <u> </u>			
	oncentration, D=D						ed Sano	d Gra		ocation: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to				ted.)				tors for Problematic Hydric Soils <sup>3</sup> :
				Sandy Redox (						m Muck (A10)
	oipedon (A2)			Stripped Matrix Loamy Mucky I		1) (22000		4)		d Parent Material (TF2) ry Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamy Gleyed	•	,		(1)		ner (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		Depleted Matrix		-)				
	ark Surface (A12)			Redox Dark Su	. ,	)			<sup>3</sup> Indica	tors of hydrophytic vegetation and
	lucky Mineral (S1)									land hydrology must be present,
-	Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present,         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.									
	Restrictive Layer (if present):									
Type: No				_						
Depth (in	ches): <u>N/A</u>			-					Hydric So	il Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met th	rough ir	ndicato	r F6.						
HYDROLO	GY									
Wetland Hy	drology Indicator	'S:								
Primary Indi	cators (minimum o	f one req	uired; ch	eck all that app	ly)				Sec	ondary Indicators (2 or more required)
Surface	( )			Water-Sta	ined Leav	/es (B9) ( <b>e</b>	except N	MLR	A 🗆 ۱	Nater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	iter Table (A2)				A, and 4E	3)				4A, and 4B)
Saturatio	Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)							Drainage Patterns (B10)		
Water M	arks (B1)			Aquatic In	vertebrate	es (B13)				Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydrogen	Sulfide O	dor (C1)				Saturation Visible on Aerial Imagery (C9)
🗌 Drift Dep	oosits (B3)			Oxidized F	Rhizosphe	eres along	Living F	Root	s (C3) 🔲 (	Geomorphic Position (D2)
🔲 Algal Ma										
🔲 Iron Dep								FAC-Neutral Test (D5)		
Surface	Soil Cracks (B6)			Stunted or	r Stressed	l Plants (D	01) ( <b>LRF</b>	<b>R A</b> )		Raised Ant Mounds (D6) (LRR A)
🔲 Inundatio	on Visible on Aeria	I Imagery	(B7)	Other (Exp	olain in Re	emarks)				Frost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ve Surfac	ce (B8)							
Field Obser	vations:									
Surface Wat	er Present?	Yes 🗌	No 🗙	Depth (inche	<sub>s):</sub> None	Э				
Water Table	Present?	Yes 🗌	No 🗙	Depth (inche						
Saturation P	resent?	Yes 🗌	No 🗙	Depth (inche	<sub>s):</sub> None	e	v	Vetla	nd Hydrolo	gy Present? Yes 🗌 No 🗵

(includes capillary fringe)

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

Remarks:

Project/Site: 1244.001 - Puget Western City/Co	ounty: Chehalis / Lewis Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western	State: WA Sampling Point: MP-1A
Investigator(s): Erin Harker, Ryan Krapp	Section, Township, Range: <u>11, 13 N, 02 W</u>
Landform (hillslope, terrace, etc.): Valley Floor Local	relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0</u>
Subregion (LRR): <u>A2</u> Lat:46.6266	T3         Long:         -122.90487436         Datum:         WGS 84
Soil Map Unit Name: Reed silty clay loam	NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Ye	s 🔲 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 same	oling point locations, transects, important features, etc.
Hydric Soil Present? Yes 🛛 No 🗌	Is the Sampled Area within a Wetland? Yes 🗵 No 🗌

Remarks: All three wetland criteria met. Data collected in Wetland F. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-1A) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during the June investigation and throughout the monitoring period.

		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Agrostis capalaris	40	Yes	FAC	Column Totals: (A) (B)
2. Alopecurus pratensis	35	Yes	FAC	
3. Holcus lanatus	15	No	FAC	Prevalence Index = B/A =
4. Ranunculus repens	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Anthoxanthum odoratum	5	No	FACU	Rapid Test for Hydrophytic Vegetation
6				➤ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	105	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1	-			Hydrophytic
2				Vegetation
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes 🗵 No 🗌
Remarks: Hydrophytic vegetation criteria met thro	ouah dom	ninance te	est Vene	tation data collected during June 2019
investigation.	agii doll			

Profile Des	cription: (Describ	e to the de	pth needed to doc	ument the	e indicator	or confirm	n the ab	sence of indicators.)		
Depth	Matrix			dox Featur						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur			
0 - 8	10YR 2/1	95	5YR 3/4	5	C	M,PL	SiCIL	o Silty clay loam		
8 - 14	10YR 2/1	85	5YR 3/4	15	С	M,PL	SiCIL	o Silty clay loam		
14 - 18	7.5YR 4/1	95	7.5YR 5/6	5	C	M,PL	SiCIL	o Silty clay loam		
17								21. and the DL David Linited M. Materia		
	Concentration, D=De					ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. dicators for Problematic Hydric Soils <sup>3</sup> :		
Histosol			Sandy Redox		,			 ] 2 cm Muck (A10)		
	pipedon (A2)		Stripped Matri				Ē	Red Parent Material (TF2)		
Black H	istic (A3)		Loamy Mucky	Mineral (F	=1) ( <b>excep</b>	t MLRA 1)		] Very Shallow Dark Surface (TF12)		
Hydroge	en Sulfide (A4)						] Other (Explain in Remarks)			
Depleted Below Dark Surface (A11) Depleted Matrix (F3)										
X Thick D	✗ Thick Dark Surface (A12) ✗ Redox Dark S			urface (F6	5)		<sup>3</sup> Ir	<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy M	Sandy Mucky Mineral (S1)				wetland hydrology must be present,					
Sandy (	Gleyed Matrix (S4)		Redox Depres	sions (F8)	)		unless disturbed or problematic.			
	Layer (if present):									
Type: N										
Depth (ir	nches): <u>N/A</u>						Hydri	ic Soil Present? Yes 🗵 No 🗌		
Remarks:										
Hydric soi	I criteria met thr	ough indi	cators A12 and	F6.						
HYDROLO										
-	vdrology Indicators		d abook all that an	nhu)				Secondary Indicators (2 or more required)		
	icators (minimum of							Secondary Indicators (2 or more required)		
	( )					except MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,		
-	ater Table (A2)			4A, and 4	В)			4A, and 4B)		
Saturati	on (A3)		Salt Crus					Drainage Patterns (B10)		
Water N	/larks (B1)		•	nvertebrat	. ,			Dry-Season Water Table (C2)		
Sedime	nt Deposits (B2)		Hydroger	n Sulfide C	Odor (C1)			Saturation Visible on Aerial Imagery (C9)		
Drift De	posits (B3)		Oxidized	Rhizosph	eres along	Living Roo	ots (C3)	<ul> <li>Geomorphic Position (D2)</li> </ul>		
Algal Ma	at or Crust (B4)		Presence	e of Reduc	ed Iron (C	4)		Shallow Aquitard (D3)		
Iron Dep	posits (B5)		Recent Ir	on Reduct	tion in Tille	d Soils (C6	i)	FAC-Neutral Test (D5)		
Surface	Inface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)						Raised Ant Mounds (D6) (LRR A)			
	$\frac{1}{2} = \frac{1}{2} $									

Inundation Visible on Aer	rial Imagery (B7)	Frost-Heave Hummocks (D7)							
Sparsely Vegetated Cont	cave Surface (B8)								
Field Observations:									
Surface Water Present?	Yes 🗌 No 🗙	Depth (inches): <u>None</u>							
Water Table Present?	Yes 🗶 No 🗌								
Saturation Present? (includes capillary fringe)	Yes 🕅 No 🗌	Depth (inches): 20 / None	Wetland Hydrology Present? Yes 🗵 No 🗌						
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Monitoring Well (MP-1A) location supports 3 consecutive weeks of high groundwater table during growing season.									
Remarks:									
Hydrology criteria met through secondary indicators C9 and D2 during June 2019 delineation. A water table was observed in March									

2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: <u>1244.001 - Puget Western</u>	City/County	.: Chehalis / Lew	is	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State	WA	Sampling Point: MP-1B
Investigator(s): Erin Harker, Ryan Krapp		Section, Township, F	Range: <u>11, 13 N</u>	N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor				Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u>				
Soil Map Unit Name: Reed silty clay loam			_ NWI classificat	
Are climatic / hydrologic conditions on the site typic	al for this time of year? Yes 🗌			
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circ	umstances" prese	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explai	n any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site	e map showing sampling	g point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes 🗵	No 🗌 🛛 Is th	e Sampled Area		
Hydric Soil Present? Yes 🗵	No 🗖	in a Wetland?	Yes 🛛 No	
Wetland Hydrology Present? Yes 🗙	No 🗌			
Remarks: All three wetland criteria met. Data collected in Wetland	F. Vegetation was mowed at initial well inst	allation, updated vegetation of	lata collected during June	e site visit. Monitoring well (MP-1B)

All three wetland criteria met. Data collected in Wetland F. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-1B) location; monitoring date utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during the June investigation and throughout the monitoring period.

Absolute Dominant Indicator Dominance Test worksheet:	
Tree Stratum       (Plot size: 30 ft)       % Cover       Species?       Status         Number of Dominant Species       0	
1 That Are OBL, FACW, or FAC: <u>3</u>	(A)
2 Total Number of Dominant	
3 Species Across All Strata:	(B)
4 Percent of Dominant Species	
<u> </u>	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)	
1 Prevalence Index worksheet:	
2 Total % Cover of: Multiply by	
3 OBL species x 1 =	
4 FACW species x 2 =	
5 FAC species x 3 =	
<u>0</u> = Total Cover FACU species x 4 =	
Herb Stratum (Plot size: 10 ft) UPL species x 5 =	
1         Agrostis capalaris         25         Yes         FAC         Column Totals:         (A)	(B)
2. Juncus effusus <u>20 Yes</u> FACW	
3. Lotus corniculatus 15 Yes FAC Prevalence Index = B/A =	_
4. Anthoxanthum odoratum         15         Yes         FACU         Hydrophytic Vegetation Indicators:	
5. Hypochaeris radicata 10 No FACU 🗌 Rapid Test for Hydrophytic Vegetation	
6. Holcus lanatus 10 No FAC Dominance Test is >50%	
7. Dactylis glomerata 5 No FACU □ Prevalence Index is ≤3.01	
8 Morphological Adaptations <sup>1</sup> (Provide sup	
9 data in Remarks or on a separate sh	eet)
10 Problematic Hydrophytic Vegetation <sup>1</sup> (Ex	plain)
11 100 = Total Cover 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11	
Woody Vine Stratum (Plot size: 30 ft)	
1	
2 0 − Vegetation 0 = Total Cover Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum 0	
Remarks: Hydrophytic vegetation criteria met through dominance test. Vegetation data collected during June 201	
I IVATODITVITO VELECICIONI UNICITALI INCLUTI AUTIMATICE LESI. VELECICIONI UNICONTROLEO AUTIMA JUNE 201	

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix			Redo	x Features					
(inches)	Color (moist)	%		r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
0 - 5	10YR 2/1	98	7.5`	YR 4/6	2	С	Μ	SiLo		Silt loam
5 - 15	10YR 2/1	95	7.5	YR 5/6	5	С	М	SiCIL	0	Silty clay loam
15 - 18	7.5 YR 4/1	95	10 <b>`</b>	YR 6/6	5	С	М	CILo		Clay loam
					· · · · · · · · · · · · · · · · · · ·					
					• • • • • • • • • • • • • • • • • • •	<u> </u>				
					·					
	oncentration, D=De						ed Sand G			ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	all LRRs	s, unless other	wise note	d.)		Ir	dicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		🗆 s	andy Redox (S	5)			Ľ	] 2 cm	Muck (A10)
	ipedon (A2)			stripped Matrix (	• •					Parent Material (TF2)
Black His				oamy Mucky M		(except	MLRA 1)			Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed N					] Othe	r (Explain in Remarks)
	Below Dark Surfa	ce (A11)		epleted Matrix				2.		
	rk Surface (A12)			Redox Dark Sur	. ,			3		rs of hydrophytic vegetation and
•	ucky Mineral (S1)			epleted Dark S		)				nd hydrology must be present,
	leyed Matrix (S4) Layer (if present):			Redox Depressi	ons (F8)			-	unies	s disturbed or problematic.
Type: NO										
	<sub>ches):</sub> N/A									
	ciles). <u></u>							Hydr	ic Soil	Present? Yes 🗷 No 🗌
Remarks:										
Hydric soil	criteria met thr	ough inc	licators	s A12 and F	6.					
HYDROLO	GY									
	drology Indicator	s:								
-	cators (minimum of		red <sup>.</sup> che	ck all that apply	<b>/</b> )				Secon	ndary Indicators (2 or more required)
Surface \		0110 10441		Water-Stair		(BQ) ( <b>o</b>	vcont MI E	>^		ater-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,
	ter Table (A2)				, and 4B)	s (D9) ( <b>e</b>	KCept MLr	NA		4A, and 4B)
_										
	( )			Salt Crust (	, ,	(012)				rainage Patterns (B10)
Water Ma	. ,			Aquatic Inv		` '				y-Season Water Table (C2)
	t Deposits (B2)			Hydrogen S				ta (00)		aturation Visible on Aerial Imagery (C9)
	osits (B3)			Oxidized R		-	-	ts (C3)		eomorphic Position (D2)
	t or Crust (B4)			Presence c		-	-			nallow Aquitard (D3)
	osits (B5)			Recent Iror			•	,		AC-Neutral Test (D5)
	Soil Cracks (B6)		_	Stunted or			1) ( <b>LRR A</b> )	)		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria	0,0	,	Other (Expl	lain in Ren	narks)			L Fr	ost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)										
Field Obser		_	_		Nono					
Surface Wat	er Present?		No 🗙	Depth (inches						
Water Table	Present?	Yes 🗙	No 🗌	Depth (inches						
Saturation P (includes cap		Yes 🗙	No 🗌	Depth (inches	): <u>18 / N</u>	one	Wetl	and Hy	drology	y Present? Yes 🗵 No 🗌
		m gauge,	monitori	ng well, aerial p	photos, pre	vious ins	spections),	if availa	ble:	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Monitoring Well (MP-1B) location supports 3 consecutive weeks of high groundwater table during growing season.										
Remarks:										
Remarks.										

2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	_City/County: Chehalis / Lewis	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		Sampling Point: MP-1C
Investigator(s): Erin Harker, Ryan Krapp	Section, Township, Range: <u>1</u>	1, 13 N, 02 W
Landform (hillslope, terrace, etc.): <u>Hill / Valley Floor</u>	Local relief (concave, convex, none): <u>N</u>	
Subregion (LRR): <u>A2</u> Lat: <u>4</u>	6.626078 Long: -122.90	
Soil Map Unit Name: <u>Reed silty clay loam</u>	NWI cla	assification: N/A
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes 🔲 No 🗷 (If no, explain in Ren	narks.)
Are Vegetation, Soil, or Hydrology significantly d	isturbed? Are "Normal Circumstance	es" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally probl	ematic? (If needed, explain any ans	wers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, trans	sects, important features, etc.
Hydrophytic Vegetation Present?       Yes X       No         Hydric Soil Present?       Yes X       No         Wetland Hydrology Present?       Yes X       No	Is the Sampled Area within a Wetland? Yes	5 🗵 No 🗌
Remarks: All three wetland criteria met. Data collected in Wetland F. Vegetation was mowe location; monitoring data utilized to support hydrology determination. While preci during the June investigation and throughout the monitoring period.		

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>2</u> (A)
2				
				Total Number of Dominant Species Across All Strata: 3 (B)
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
Copling/Chruh Stratum (Distaires 20 ft)	0	= Total C	Cover	That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				Prevalence Index worksheet:
1				
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	Cover	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Agrostis capalaris	35	Yes	FAC	Column Totals: (A) (B)
2. Anthoxanthum odoratum	30	Yes	FACU	
3. Holcus lanatus	20	Yes	FAC	Prevalence Index = B/A =
4 Lotus corniculatus	8	No	FAC	Hydrophytic Vegetation Indicators:
5. Dactylis glomerata	4	No	FACU	Rapid Test for Hydrophytic Vegetation
6. Hypochaeris radicata	3	No	FACU	▼ Dominance Test is >50%
				$\square$ Prevalence Index is $\leq 3.0^1$
7				Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				☐ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	100	= Total C	Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1		·		Hydrophytic
2		·		Vegetation
0	0	= Total C	Cover	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum				
Remarks: Hvdrophytic vegetation criteria met t	hrough dom	ninance t	est. Vege	tation data collected during June 2019
investigation.				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth Matrix Redox Features											
(inches)	Color (moist)	%	Color	(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	Ire	Remarks	
0 - 7	10YR 2/2	100	-		-	-	-	SiLo		Silt loam	
7 - 11	10YR 3/1	97	5YF	R 4/6	3	С	М	SiCI	_0	Silty clay loam	
11 - 17	7.5 YR 4/1	93	7.5	YR 6/6	5	С	М	CILo		Clay loam	
								·			
								. <u> </u>			
<sup>1</sup> Type C=Co	oncentration, D=De	pletion RN	/=Redi	ced Matrix CS	=Covered	l or Coate	ed Sand (	Grains	<sup>2</sup> 1 oc	cation: PL=Pore Lining, M=Matrix.	
	Indicators: (Appli						u canu c			ors for Problematic Hydric Soils <sup>3</sup> :	
Histosol				andy Redox (St						n Muck (A10)	
	ipedon (A2)			tripped Matrix (	-			_		Parent Material (TF2)	
Black His				oamy Mucky Mi	,	) (except	MLRA 1	) [		Shallow Dark Surface (TF12)	
Hydroger	n Sulfide (A4)		ΠL	oamy Gleyed M	atrix (F2)			[	] Othe	er (Explain in Remarks)	
	Below Dark Surface	ce (A11)		epleted Matrix (							
	rk Surface (A12)			edox Dark Surfa	. ,			3		ors of hydrophytic vegetation and	
	ucky Mineral (S1)			epleted Dark Su	•	7)				nd hydrology must be present,	
	leyed Matrix (S4)			edox Depressio	ons (F8)				unles	s disturbed or problematic.	
Type: No	Layer (if present):										
· ·	<sub>ches):</sub> N/A										
	Siles). <u></u>							Hyd	ric Soil	Present? Yes 🗵 No 🗌	
Remarks:											
Hydric soil	criteria met thre	ough indi	cators	s A11 and F6	ò.						
HYDROLO	GY										
	drology Indicators										
-	ators (minimum of		od: obo	ok all that apply	<b>`</b>				Saaar	adany Indiactors (2 ar more required)	
	•	one requir				- (DO) (		<b>D</b> 4		ndary Indicators (2 or more required)	
Surface \				Water-Stain			KCEPT INL	.RA		(ater-Stained Leaves (B9) (MLRA 1, 2,	
-	ter Table (A2)				, and 4B)					4A, and 4B)	
Saturatio	( )			Salt Crust (E	,	(012)				rainage Patterns (B10)	
Water Ma				Aquatic Inve		. ,				ry-Season Water Table (C2)	
	t Deposits (B2)			Hydrogen S			iving Po	rate (C2)		aturation Visible on Aerial Imagery (C9)	
	osits (B3) t or Cruot (B4)			Oxidized Rh Presence of	•	-	-	018 (C3)		eomorphic Position (D2)	
	t or Crust (B4)			Recent Iron			,	(C)		hallow Aquitard (D3)	
	osits (B5) Soil Cracks (B6)			Stunted or S						AC-Neutral Test (D5)	
	on Visible on Aerial	Imageny (F	87)	Other (Expla				••)		aised Ant Mounds (D6) ( <b>LRR A</b> ) rost-Heave Hummocks (D7)	
	Vegetated Concav					nanxsj					
Field Obser	<u> </u>	C Ounace	(00)								
Surface Wate				Depth (inches)	None						
				Depth (inches)							
Water Table								4			
Saturation Pr (includes cap		Yes 🗌 🛛 N	lo 🗙	Depth (inches)			We	tiand Hy	arolog	y Present? Yes 🗵 No 🗌	
		m gauge, n	nonitori	ng well, aerial p	hotos, pre	evious ins	pections	), if availa	able:		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Monitoring Well (MP-1C) location supports 3 consecutive weeks of high groundwater table during growing season.											
Remarks:	onitonic most th	uak =		indiante Of		) duration	lune 0	040 -1-1	ince!		
			marv	indicators CC	₄ann D	z aurina	June 2	UTA del	meand	on. No wetland hydrology criteria	

was observed during the March 2019 visit at the time of the well install. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

_City/County: <u>V</u>	Chenalis / Lewis	Sampl	ing Date: 3/0/19 & 0/20/19					
	State: WA	Sampl	ing Point: MP-2					
Se	ction, Township, Range:	11, 13 N, 02	W					
Local relief (d	concave, convex, none): _	None	Slope (%): 0					
46.625819	Long: -122.9	90341328	Datum: WGS 84					
	NWI	classification: N	/A					
ear?Yes 🗌 🛚	No 🗵 (If no, explain in R	emarks.)						
isturbed?	Are "Normal Circumstan	ces" present? Y	′es 🗵 No 🗌					
ematic?	(If needed, explain any a	nswers in Remar	ks.)					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
	•	es 🗵 No 🗌						
e li	Local relief ( 6.625819 ear? Yes [] I sturbed? ematic? g sampling [ Is the S	State: WA State: WA Section, Township, Range: Local relief (concave, convex, none): 6.625819 Long:122.9 NWI ear? Yes □ No ⊠ (If no, explain in Resturbed? Are "Normal Circumstan ematic? (If needed, explain any an sampling point locations, trans Is the Sampled Area	sturbed? Are "Normal Circumstances" present? Y ematic? (If needed, explain any answers in Remar g sampling point locations, transects, impo Is the Sampled Area					

Remarks: All three wetland criteria met. Data collected in Wetland E. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-2) location; monitoring date utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during the June investigation and throughout the monitoring period.

		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species
1		·		That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3		·		Species Across All Strata: <u>1</u> (B)
4		·		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
				Prevalence Index worksheet:
1				
2				
3				OBL species x 1 =
4		·		FACW species x 2 =
5				FAC species x 3 =
Lloch Stratium (Diot aiza: 10 ft)	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> ) 1. Ranunculus repens	55	Yes	FAC	UPL species x 5 =
2. Holcus lanatus	10	No	FAC	Column Totals: (A) (B)
3. Anthoxanthum odoratum	10	No	FAC	Prevalence Index = B/A =
			FAC	
4. Agrostis capalaris	10	No		Hydrophytic Vegetation Indicators:
5. Dactylis glomerata	10	No	FACU	Rapid Test for Hydrophytic Vegetation
6				Dominance Test is >50%
7				Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				□ Wetland Non-Vascular Plants <sup>1</sup>
10				
11		<u> </u>		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	95	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Hydrophytic
2				Vegetation
_	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>5</u>				
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est. Vege	tation data collected during June 2019
investigation.	0		0	5

Profile Desc	cription: (Describe	to the dep	oth needed to docu	iment the	indicator	or confirm	n the abs	sence of indicators.)	
Depth	Matrix			ox Featur	es				
(inches)	Color (moist)		Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture		
0 - 9	10YR 3/1	97	5YR 3/4	3	<u> </u>	M	SiLo	Silt loam	
9 - 15	10YR 3/1	95	7.5 YR 6/6	5	С	Μ	SiCILo	Silty clay loam	
15 - 18	10YR 4/1	95	7.5 YR 6/6	5	С	Μ	CILo	Clay loam	
	oncentration, D=Dep					ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
-	Indicators: (Applic	able to all			ted.)			dicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol	. ,		Sandy Redox				_	2 cm Muck (A10)	
	pipedon (A2)		Stripped Matrix	• •	(1)				
Black Hi	stic (A3) n Sulfide (A4)		<ul> <li>Loamy Mucky</li> <li>Loamy Gleyed</li> </ul>			t MLRA 1)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)	
	Below Dark Surface	ρ (Δ11)	Depleted Matri		<u> </u>				
-	ark Surface (A12)	C (ATT)	Redox Dark Si		)		<sup>3</sup> In	dicators of hydrophytic vegetation and	
	lucky Mineral (S1)		Depleted Dark	•	,			wetland hydrology must be present,	
-					unless disturbed or problematic.				
	Layer (if present):		-					· · · · · · · · · · · · · · · · · · ·	
Type: No									
Depth (in	ches): N/A						Hydri	ric Soil Present? Yes 🗵 No 🗌	
Remarks:							•		
Hydric soil	criteria met thro	ugh indi	cator F6.						
-									
HYDROLO	GY								
	drology Indicators:	1							
-	cators (minimum of c		d; check all that ap	oly)				Secondary Indicators (2 or more required)	
Surface			☐ Water-Sta		/es (B9) ( <b>e</b>	except MLF		Water-Stained Leaves (B9) (MLRA 1, 2,	
	ter Table (A2)			A, and 4				4A, and 4B)	
Saturatio	. ,		☐ Salt Crus		,			Drainage Patterns (B10)	
U Water M	. ,		Aquatic Ir		es (B13)			Dry-Season Water Table (C2)	
	t Deposits (B2)		Hydrogen Sulfide Odor (C1)					Saturation Visible on Aerial Imagery (C9)	
	oosits (B3)				. ,	Living Roo	ots (C3)	Geomorphic Position (D2)	
	it or Crust (B4)			•	-	-	()	Shallow Aquitard (D3)	
						FAC-Neutral Test (D5)			
						Raised Ant Mounds (D6) (LRR A)			
	on Visible on Aerial I	magery (B			•			Frost-Heave Hummocks (D7)	
<ul> <li>Inundation Visible on Aerial Imagery (B7)</li> <li>Other (Explain in Remarks)</li> <li>Frost-Heave Hummocks (D7)</li> <li>Sparsely Vegetated Concave Surface (B8)</li> </ul>									
Field Obser	5	,	-						
Surface Wat	er Present?	∕es 🔲 N	o 🗴 Depth (inche	es): None	e				

(includes capillary fringe)			
Describe Recorded Data (stream gauge	, monitoring well, aerial photos	s, previous inspections), if avail	able:

Yes 🗵 No 🗌

Yes 🗵 No 🗌

Monitoring Well (MP-2) location supports 3 consecutive weeks of high groundwater table during growing season.

Depth (inches): 23 / None

Depth (inches): 23 / None

#### Remarks:

Hydrology criteria met through secondary indicators C9 and D2 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Water Table Present?

Saturation Present?

Wetland Hydrology Present? Yes 🗵 No 🗌

Project/Site: 1244.001 - Puget Western	City/County: <u>C</u> ł	hehalis / Lewis	_ Sampling Date: <u>3/6/19 &amp; 6/28/19</u>				
Applicant/Owner: Puget Western		State: WA	Sampling Point: MP-3				
Investigator(s): Erin Harker, Ryan Krapp	Secti	ion, Township, Range: <u>11, 13</u>	N, 02 W				
Landform (hillslope, terrace, etc.): Hill			VE Slope (%): 3				
Subregion (LRR): <u>A2</u>	Lat: 46.625530	Long: <u>-122.902934</u>	20 Datum: WGS 84				
Soil Map Unit Name: <u>Reed silty clay loam</u>		NWI classifica	ation: N/A				
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? A	Are "Normal Circumstances" pre	esent? Yes 🗵 No 🗌				
Are Vegetation, Soil, or Hydrology	_ naturally problematic? (If	f needed, explain any answers i	n Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present?       Yes ⋈ N         Hydric Soil Present?       Yes ⋈ N         Wetland Hydrology Present?       Yes ⋈ N	lo 🗌 within a V	mpled Area Wetland? Yes 区 N	No 🗌				

Remarks: All three wetland criteria met. Data collected in Wetland E. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-3) location; monitoring date utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during the June investigation and throughout the monitoring period.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2		·		Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1		·		Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Ranunculus repens	25	Yes	FAC	Column Totals: (A) (B)
2. Lotus corniculatus	20	Yes	FAC	
3. Anthoxanthum odoratum	15	Yes	FACU	Prevalence Index = B/A =
4. Juncus effuses	10	No	FACW	Hydrophytic Vegetation Indicators:
5. Agrostis capalaris	10	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Hypochaeris radicata	5	No	FACU	➤ Dominance Test is >50%
7. Dactylis glomerata	5	No	FACU	□ Prevalence Index is ≤3.0 <sup>1</sup>
8. Holcus lanatus	5	No	FAC	Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				∫ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	05			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	95	= Total C	over	be present, unless disturbed or problematic.
,,,,,				
1		·		Hydrophytic
2	0	= Total C		Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum 5	<u> </u>	- Total C	over	
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est. Veae	tation data collected during June 2019
investigation.	0		- 3-	0

Profile Desc	cription: (Describ	e to the de	epth ne	eded to docu	nent the	indicator	or confirm	n the at	osence	of indicators.)
Depth	. 、 Matrix		•		x Feature					
(inches)	Color (moist)	%	Color	(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ire	Remarks
1 - 7	10YR 3/1	100	-		-	-		SiLo		Silt loam
7 - 10	10YR 3/1	95	5 Y	R 3/4	5	С	Μ	SiLo		Silt loam
10 - 16	10YR 3/1	95	7.5	YR 4/6	5	С	Μ	SiLo		Silt loam
16 - 20	10YR 4/1	93	7.5	YR 5/6	7	С	М	SiLo		Silt loam
	-									
·						_				
·					·					
17				and Matrix Of					21	
	oncentration, D=De Indicators: (Appl						ed Sand G			ation: PL=Pore Lining, M=Matrix. rs for Problematic Hydric Soils <sup>3</sup> :
				andy Redox (S		.cu.)				Muck (A10)
	bipedon (A2)			stripped Matrix	-					Parent Material (TF2)
Black Hi	• • • •			oamy Mucky N	. ,	1) ( <b>excep</b> t	MLRA 1)			Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed I			,	Ē	-	r (Explain in Remarks)
	Below Dark Surfa	ice (A11)		epleted Matrix						
Thick Da	ark Surface (A12)		×F	edox Dark Su	face (F6)			3	Indicato	rs of hydrophytic vegetation and
🔲 Sandy M	lucky Mineral (S1)			epleted Dark S		7)			wetla	nd hydrology must be present,
	ileyed Matrix (S4)		□ F	Redox Depress	ions (F8)				unles	s disturbed or problematic.
	Layer (if present):	:								
Type: No										
Depth (in	ches): <u>N/A</u>							Hydı	ric Soil	Present? Yes 🗵 No 🗌
Remarks:										
Hydric soil	criteria met thr	ough ind	icator	F6.						
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	cators (minimum o	f one requir	ed; che	ck all that appl	y)				Secor	dary Indicators (2 or more required)
Surface	Water (A1)			🗌 Water-Stai	ned Leav	es (B9) ( <b>e</b>	xcept MLI	RA	🗆 W	ater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)			1, 2, 4/	A, and 4B	5)				4A, and 4B)
Saturation	on (A3)			Salt Crust	(B11)				🗌 Dr	ainage Patterns (B10)
🔲 Water M	arks (B1)			Aquatic Inv	/ertebrate	s (B13)			🗌 Dr	y-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydrogen	Sulfide O	dor (C1)			🗙 Sa	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)				Rhizosphe	res along	Living Roo	ots (C3)	_	eomorphic Position (D2)
	it or Crust (B4)			Presence		-	-	. ,	🗆 Sh	nallow Aquitard (D3)
-	osits (B5)			Recent Iro		•	,	6)		AC-Neutral Test (D5)
-	Soil Cracks (B6)			Stunted or			•	,		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria	l Imagery (I		Other (Exp			, <b>(</b>	,		ost-Heave Hummocks (D7)
	Vegetated Conca					,			_	· · ·
Field Obser			. ,							
Surface Wat	er Present?	Yes 🗌 🕴	No 🗙	Depth (inches	<sub>s):</sub> None	)				
Water Table	Present?		No 🗌	Depth (inches						
Saturation P	resent?	Yes 🗵 🕴	No 🗌	Depth (inches			Wet	land Hy	drology	/ Present? Yes 🗵 No 🗌
(includes ca	pillary fringe)			ng well. aerial						

Monitoring Well (MP-3) location supports 3 consecutive weeks of high groundwater table during growing season.

#### Remarks:

Hydrology criteria met through secondary indicators C9 and D2 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	City/County: Cl	hehalis / Lewis	Sampling Date: 3/6/19 & 6/28/19				
Applicant/Owner: Puget Western		State: WA	Sampling Point: <u>MP-4</u>				
Investigator(s): Erin Harker, Ryan Krapp	Sect	ion, Township, Range: <u>11</u>					
Landform (hillslope, terrace, etc.): Hill			one Slope (%): 2				
Subregion (LRR): <u>A2</u> Lat:	46.625280	Long: -122.902	249917 Datum: WGS 84				
Soil Map Unit Name: <u>Reed silty clay loam</u>		NWI clas	ssification: N/A				
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes 🗌 No	o 🗵 (If no, explain in Rem	arks.)				
Are Vegetation, Soil, or Hydrology significantly	y disturbed? A	Are "Normal Circumstances	s" present? Yes 🗵 No 🗌				
Are Vegetation, Soil, or Hydrology naturally pro	oblematic? (If	f needed, explain any ansv	vers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present?       Yes X       No          Hydric Soil Present?       Yes X       No          Wetland Hydrology Present?       Yes X       No		mpled Area Wetland? Yes	X No 🗌				

Remarks: All three wetland criteria met. Data collected in Wetland E. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-4) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during the June investigation and throughout the monitoring period.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2		·		Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4		·		
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5.				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Phalaris arundinacea	50	Yes	FACW	Column Totals: (A) (B)
2. Holcus lanatus	20	Yes	FAC	
3. Ranunculus repens	20	Yes	FAC	Prevalence Index = B/A =
4. Dactylis glomerata	5	No	FACU	Hydrophytic Vegetation Indicators:
5. Phleum pratense	5	No	FAC	Rapid Test for Hydrophytic Vegetation
6				➤ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Hydrophytic
2				Vegetation
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes 🗵 No 🗌
Remarks: Hydrophytic vegetation criteria met thro	ouah dom	ninance te	est Vege	tation data collected during June 2019
investigation.	agn aon			

Depth	Matrix			Re	dox Feature				
(inches)	Color (moist)	<u>%</u>	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	<u>Remarks</u>
0 - 8	10YR 2/1	100			-			SiLo	Silt loam
8 - 18	10YR 2/1	98	7.5	9 YR 3/4	2			SiLo	Silt loam
		·					·		
	oncentration, D=D						ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to				ed.)			cators for Problematic Hydric Soils <sup>3</sup> :
Histosol	. ,			Sandy Redox					2 cm Muck (A10)
	ipedon (A2)			Stripped Matr	· · ·	() (			Red Parent Material (TF2)
Black His	n Sulfide (A4)			Loamy Mucky Loamy Gleyed			WILRA 1)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	Below Dark Surfa	ace (A11)		Depleted Mat	-	)			
	rk Surface (A12)			Redox Dark S	. ,			<sup>3</sup> Ind	icators of hydrophytic vegetation and
	ucky Mineral (S1)	)		Depleted Darl	. ,	7)			vetland hydrology must be present,
	leyed Matrix (S4)			Redox Depres	ssions (F8)			ι	inless disturbed or problematic.
	Layer (if present)	):							
Туре: <u>Nc</u>				-					
Depth (in	<sub>ches):</sub> _N/A							Hydric	Soil Present? Yes 🗵 No 🗌
Remarks:									
Hydric soil	criteria met th	rough in	dicato	<sup>-</sup> F6.					
IYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum c	of one requ	uired; ch	eck all that ap	oply)			<u></u> <u>s</u>	econdary Indicators (2 or more required)
Surface	Water (A1)			U Water-St	tained Leave	es (B9) ( <b>e</b>	xcept MLR	RA [	Water-Stained Leaves (B9) (MLRA 1, 2,
🗌 High Wa	ter Table (A2)			1, 2,	4A, and 4B	)			4A, and 4B)
Saturatio	on (A3)			Salt Crus	st (B11)			Ľ	] Drainage Patterns (B10)
U Water M	arks (B1)			Aquatic I	nvertebrate	s (B13)			] Dry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydroge	n Sulfide Oo	dor (C1)		>	Saturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized	Rhizosphe	res along	Living Roo	ts (C3) 🛽 🛽	Geomorphic Position (D2)
Algal Ma	t or Crust (B4)			Presence	e of Reduce	d Iron (C4	)		] Shallow Aquitard (D3)
Iron Dep	osits (B5)			Recent I	ron Reduction	on in Tille	d Soils (C6	) [	] FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted	or Stressed	Plants (D	1) ( <b>LRR A</b> )		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria			Other (E	xplain in Re	marks)			] Frost-Heave Hummocks (D7)
	Vegetated Conca	ave Surfac	æ (B8)						
Field Obser	vations:				N				
Surface Wat	er Present?	Yes 🗌	No 🗙	Depth (inch					
Water Table	Present?	Yes 🗙	No 🗌	Depth (inch					
Saturation P	resent?	Yes 🗙	No 🗌	Depth (inch	<sub>es):</sub> 17 / N	lone	Wetl	and Hydro	ology Present? Yes 🗵 No 🗌

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

Monitoring Well (MP-4) location supports 3 consecutive weeks of high groundwater table during the growing season.

#### Remarks:

Hydrology criteria met through secondary indicators C9 and D2 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

4044 004 Duringt Magham	Ohahalia / Lauria						
Project/Site: 1244.001 - Puget Western City/	<sub>County:</sub> Chehalis / Lewis	Sampling Date: <u>3/6/19 &amp; 6/28/19</u>					
Applicant/Owner: Puget Western	State: WA	Sampling Point: <u>MP-5</u>					
Investigator(s): Erin Harker, Ryan Krapp	Section, Township, Range: <u>11, 1</u>	3 N, 02 W					
Landform (hillslope, terrace, etc.): Hill Loc	al relief (concave, convex, none): <u>Conca</u>						
Subregion (LRR): <u>A2</u> Lat: <u>46.624</u>	526 Long: -122.90169	0487 Datum: WGS 84					
Soil Map Unit Name: Reed silty clay loam	NWI classifi	<sub>cation:</sub> N/A					
Are climatic / hydrologic conditions on the site typical for this time of year? Y	es 🔲 No 🗵 (If no, explain in Remarks	s.)					
Are Vegetation, Soil, or Hydrology significantly disturbe	d? Are "Normal Circumstances" pr	esent? 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 🗌 No 🗵	Is the Sampled Area						
Hydric Soil Present? Yes 🗌 No 🕱	· _						
Wetland Hydrology Present? Yes 🗌 No 🗵	within a Wetland? Yes						
Remarks: No wetland criteria met. Data collected upslope of Wetland C. Vegetation was mowed at ini	ial well installation, updated vegetation data collected duri	ng June site visit. Monitoring well (MP-5)					

No wetland criteria met. Data collected upslope of Wetland C. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-5) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u> )		Species?		Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 2	(A)
2					( )
3.				Total Number of Dominant Species Across All Strata: 4	(B)
		·		Species Across All Strata. <u>4</u>	(D)
4	~			Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C	over	That Are OBL, FACW, or FAC: <u>50%</u>	(A/B)
				Prevalence Index worksheet:	
1				Total % Cover of: Multiply by:	
2				OBL species         x1 =	
3					
4		·		FACW species x 2 =	
5		·		FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )	25	Vaa		UPL species x 5 =	_
1. Schedonorus arundinaceus	25	Yes	FAC	Column Totals: (A)	(B)
2. Holcus lanatus	20	Yes	FAC		
3. Hypochaeris radicata	20	Yes	FACU	Prevalence Index = B/A =	
4. Anthoxanthum odoratum	20	Yes	FACU	Hydrophytic Vegetation Indicators:	
5. Agrostis capillaris	15	No	FAC	Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				☐ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide suppor	ting
				data in Remarks or on a separate sheet	
9				Wetland Non-Vascular Plants <sup>1</sup>	
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Expla	in)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology	must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2	0			Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes 🗌 No 🗵	
Remarks:				1	
No hydrophytic vegetation criteria met.	Prevaler	nce Index	is not wa	arranted due to combined lack of hydric	soils

and wetland hydrology.

Profile Desc	ription: (Describe	to the de	pth needed to d	ocument the	indicator	or confirm	m the ab	sence of indicators.)	
Depth	Matrix			Redox Feature			_		
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu		
0 - 6	10YR 2/1	100	-	-			SiLo	Silt loam	
6 - 9	10YR 2/1	99	5YR 3/4	1	С	Μ	SiLo	Silt loam	
9 - 15	10YR 3/1	97	10 YR 3/6	3	С	Μ	CILo	Clay loam	
15 - 21	10YR 3/1	92	10YR 3/6	3	С	Μ	CILo	Clay loam	
			10YR 4/1	5	С	Μ			
					_				
		·							
<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.									
	Indicators: (Applic					-		ndicators for Problematic Hydric Soils <sup>3</sup> :	
🗌 Histosol (	(A1)		Sandy Red	ox (S5)			C	] 2 cm Muck (A10)	
Histic Ep	ipedon (A2)		Stripped Ma					Red Parent Material (TF2)	
Black His	stic (A3)		Loamy Muc	ky Mineral (F	1) ( <b>excep</b> t	MLRA 1)		Very Shallow Dark Surface (TF12)	
Hydroger	n Sulfide (A4)		Loamy Gley	/ed Matrix (F2	2)		Ľ	Other (Explain in Remarks)	
	Below Dark Surfac	e (A11)	Depleted M						
—	rk Surface (A12)		_	Surface (F6)			3	ndicators of hydrophytic vegetation and	
	ucky Mineral (S1)		•	ark Surface (F	7)			wetland hydrology must be present,	
	leyed Matrix (S4)		Redox Dep	ressions (F8)				unless disturbed or problematic.	
Type: No	_ayer (if present):								
· ·	ches): N/A								
	lies). <u></u>						Hydr	ric Soil Present? Yes 🗌 No 🗵	
Remarks:									
No hydric soil criteria met. Soil profile does not meet for F6 for two reasons: first, the second layer (soil layer 6 - 9									
inches) do	es not meet the	4 inch t	thickness req	uirement o	r the 2%	6 redox	require	ement. Second, the third layer (soil	
layer 9 - 15	5 inches) occur	s too de	ep in the soil	profile, des	spite ha	ving enc	ough re	edox concentrations.	
HYDROLO	GY								
Wetland Hyd	drology Indicators:								
Primary Indic	ators (minimum of o	one require	ed; check all that	apply)				Secondary Indicators (2 or more required)	
Surface V	Nater (A1)		U Water	Stained Leav	es (B9) ( <b>e</b>	xcept MLI	RA	Water-Stained Leaves (B9) (MLRA 1, 2,	
	ter Table (A2)			2, 4A, and 4B	• • •	•		4A, and 4B)	
☐ Saturatio				rust (B11)	,			Drainage Patterns (B10)	
U Water Ma	( )			c Invertebrate	s (B13)			Dry-Season Water Table (C2)	
	t Deposits (B2)			gen Sulfide O	. ,			Saturation Visible on Aerial Imagery (C9)	
_	osits (B3)		_ •	ed Rhizosphe	. ,	Livina Roc	ots (C3)	Geomorphic Position (D2)	
	t or Crust (B4)			nce of Reduce	-	-	()	Shallow Aquitard (D3)	
Iron Depo				t Iron Reducti	•	,	3)	☐ FAC-Neutral Test (D5)	
•	Soil Cracks (B6)			d or Stressed		-		Raised Ant Mounds (D6) (LRR A)	
	on Visible on Aerial I	magery (B		(Explain in Re	-	., (	-,	☐ Frost-Heave Hummocks (D7)	
	Vegetated Concave	0,0	, _	(	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Field Observ	-		)						
Surface Wate		∕es 🗌 N	o 🗴 Depth (in	<sub>ches):</sub> None	;				
Water Table				ches): 26 / 1					
				ches): <u>26 / 1</u> ches): <u>26 / 1</u>		Mat		dralagy Brocont? Vec 🗌 No 🕅	
Saturation Pr (includes cap		/es 🗶 N	o 🗌 Depth (in	ches). $2071$		vvet	ianu Hy	drology Present? Yes 🗌 No 🗵	
Describe Red	corded Data (stream	ı gauge, m	onitoring well, ae	rial photos, p	revious in	spections),	, if availa	able:	
Monitoring	Well (MP-5) loc	ation did	l not have 3 c	onsecutive	weeks	of high g	roundv	vater table during the growing season.	
Remarks:									
								March 2019 during well install, but was too deep	
(>12") to meet primary indicator A2. Hydrology monitoring indicates that this area is not saturated for long enough during the growing season to meet any wetland hydrology criteria.									

Project/Site: 1244.001 - Puget Western Cit	y/County: Chehalis	s / Lewis	Sam	oling Date: <u>3/6/19 &amp; 6/28/19</u>
Applicant/Owner: Puget Western		State: WA	Sam	pling Point: MP-6
Investigator(s): Erin Harker, Ryan Krapp	Section, Tow	/nship, Range:	11, 13 N, 02	2 W
Landform (hillslope, terrace, etc.): <u>Hill</u>				Slope (%): <u>5</u>
				Datum: WGS 84
Soil Map Unit Name: <u>Reed silty clay loam</u>		NW	l classification: <u>I</u>	N/A
Are climatic / hydrologic conditions on the site typical for this time of year?		no, explain in F		
Are Vegetation, Soil, or Hydrology significantly distur	bed? Are "Nor	mal Circumsta	nces" present?	Yes 🗌 No 🗵
Are Vegetation, Soil, or Hydrology naturally problema	tic? (If needed	d, explain any a	answers in Rema	arks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point lo	cations, tra	insects, imp	ortant features, etc.
Hydrophytic Vegetation Present?       Yes X       No I         Hydric Soil Present?       Yes X       No I         Wetland Hydrology Present?       Yes I       No X	Is the Sampled A within a Wetland		Yes 🗌 No 🛛	
Remarks: Not all three wetland criteria met; only hydrophytic vegetation and hydric soils present data collected during June site visit. Monitoring well (MP-6) location; monitoring data investigation, it was slightly below average at 58 percent of normal during the June inve	utilized to support hydrology	determination. Whi		

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

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover			Number of Dominant Species	<i>(</i> <b>.</b> )
1				That Are OBL, FACW, or FAC: 2	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 2	(B)
4				Percent of Dominant Species	
	0	= Total C	Cover	That Are OBL, FACW, or FAC: 100%	(A/B)
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> )				Prevalence Index worksheet:	
1					
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	_
	0	= Total C	Cover	FACU species x 4 =	_
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )	~~			UPL species x 5 =	_
1. Holcus lanatus	30	Yes	FAC	Column Totals: (A)	(B)
2. Schedonorus arundinaceus	30	Yes	FAC		
3. Hypochaeris radicata	15	No	FACU	Prevalence Index = B/A =	
4. Anthoxanthum odoratum	10	No	FACU	Hydrophytic Vegetation Indicators:	
5. Alopecurus pratensis	10	No	FAC	Rapid Test for Hydrophytic Vegetation	
<sub>6.</sub> Poa sp.*	5	No	FAC	☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide support	ting
9				data in Remarks or on a separate sheet)	-
				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology r	must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2	0	= Total C		Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum $0$	<u> </u>	- Total C	over		
Remarks:	inonao to-t	dua ta a d	minonocal		

Hydrophytic vegetation criteria met through dominance test due to a dominance of facultative species typical of upland fields.
 \*Poa species considered facultative for scoring purposes.

Profile Desc	cription: (Describe	to the dep	th needed to docu	iment the	indicator	or confirm	n the abs	sence of indicators.)		
Depth	 Matrix	•		ox Featur						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks		
0 - 6	10YR 2/2	100	-	-	-	-	SiLo	Silt loam		
6 - 15	10YR 3/1	95	5YR 3/4	5	С	Μ	SiLo	Silt loam		
15 - 24	10YR 4/1	97	7.5 YR 3/4	3	С	Μ	SiLo	Silt loam		
						·				
		<u> </u>								
	oncentration, D=Dep					ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
-	Indicators: (Applic				oted.)			dicators for Problematic Hydric Soils <sup>3</sup> :		
			Sandy Redox				_	2 cm Muck (A10) Red Parent Material (TF2)		
Black Hi	bipedon (A2) stic (A3)		<ul> <li>Stripped Matrix</li> <li>Loamy Mucky</li> </ul>	. ,				Very Shallow Dark Surface (TF12)		
	n Sulfide (A4)		Loamy Gleyed					Other (Explain in Remarks)		
	Below Dark Surface		Depleted Matri		-)					
-	ark Surface (A12)		Redox Dark Si	. ,	;)		<sup>3</sup> In	<sup>3</sup> Indicators of hydrophytic vegetation and		
	lucky Mineral (S1)		Depleted Dark Surface (F7)					wetland hydrology must be present,		
-	ileyed Matrix (S4)		Redox Depres					unless disturbed or problematic.		
Restrictive	Layer (if present):									
Type: No	one									
Depth (in	ches): <u>N/A</u>						Hvdri	c Soil Present? Yes 🗵 No 🗌		
Remarks:										
	criteria met throu	uab india	ator E6							
Tiyunc Soli		ugninuic	alui Fu.							
HYDROLO	GY									
Wetland Hy	drology Indicators:									
Primary Indi	cators (minimum of o	ne required	d; check all that app	oly)				Secondary Indicators (2 or more required)		
Surface	( )		🗌 Water-Sta	ained Lea	ves (B9) ( <b>e</b>	xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,		
🔲 High Wa	ter Table (A2)		1, 2, 4	A, and 4	В)			4A, and 4B)		
Saturation	on (A3)		Salt Crus	t (B11)				Drainage Patterns (B10)		
Water M	arks (B1)		Aquatic Ir	nvertebrat	es (B13)			Dry-Season Water Table (C2)		
Sedimer	nt Deposits (B2)		Hydroger	Sulfide C	Odor (C1)			Saturation Visible on Aerial Imagery (C9)		
🗌 Drift Dep	oosits (B3)		Oxidized	Rhizosph	eres along	Living Roo	ots (C3)	Geomorphic Position (D2)		
🗌 Algal Ma	t or Crust (B4)		Presence	of Reduc	ed Iron (C4	ł)		Shallow Aquitard (D3)		
	osits (B5)				tion in Tille	-	5)	FAC-Neutral Test (D5)		
-	Soil Cracks (B6)		Stunted c	r Stresse	d Plants (D	1) ( <b>LRR A</b>	)	Raised Ant Mounds (D6) (LRR A)		
	on Visible on Aerial Ir	magery (B7			-		-	Frost-Heave Hummocks (D7)		
	Vegetated Concave		, , , , , , , , , , , , , , , , , , , ,	-	,					
Field Obser	-		-							

Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None						
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): 24 / None						
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): 24 / None	Wetland Hydrology Present? Yes	s 🗌 No 🗵				
Describe Recorded Data (stre	eam gauge	, monitor	ing well, aerial photos, previous inspe	ctions), if available:					
Monitoring Well (MP-6) location did not have 3 consecutive weeks of high groundwater table during the growing season.									
Remarks:									
le wetland hydrology ariteria was met during the June 2010 investigation. A water table was absorved in March 2010									

No wetland hydrology criteria was met during the June 2019 investigation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. Hydrology monitoring indicates that this area is not saturated for long enough during the growing season to meet any wetland hydrology criteria.

Project/Site: 1244.001 - Puget Western	City/County: Che	halis / Lewis	_ Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State: WA	_ Sampling Point: MP-7
Investigator(s): Erin Harker, Ryan Krapp	Section	n, Township, Range: <u>11, 13</u>	3 N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor	Local relief (conc	ave, convex, none): <u>Conca</u>	ave Slope (%): 5
Subregion (LRR): <u>A2</u> La	<sub>t:</sub> 46.622728	Long: -122.89817	992 Datum: WGS 84
Soil Map Unit Name: Reed silty clay loam		NWI classific	cation: PEMA
Are climatic / hydrologic conditions on the site typical for this time	e of year? Yes 🗌 No 🕨	(If no, explain in Remarks	.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are	"Normal Circumstances" pr	esent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally	problematic? (If n	eeded, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site map sho	wing sampling poir	nt locations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □	Is the Sam	and Area	
Hydric Soil Present? Yes 🗵 No 🗌	within a We	_	No 🗆
Wetland Hydrology Present? Yes 🗵 No 🗌			

Remarks: All three wetland criteria met. Data collected in Wetland W. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-7) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Phalaris arundinacea	60	Yes	FACW	Column Totals: (A) (B)
2. Lotus corniculatus	25	Yes	FAC	
3. Juncus effusus	10	No	FACW	Prevalence Index = B/A =
4. Agrostis capalaris	5	No	FAC	Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				➤ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Hydrophytic
2				Vegetation
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes ⊠ No □
Remarks: Hydrophytic vegetation criteria met thro	onap qou	ninance t	est Vege	tation data collected during June 2019
investigation.	agii don		oot. voge	

Profile Desc	ription: (Describe	to the dep	th needed to do	cument the	indicator	or confirm	n the abs	ence of indicators.)		
Depth	Matrix			edox Feature			_			
(inches)	Color (moist)		Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture			
0 - 13	10YR 3/1	97	5YR 3/4	3	С	Μ	SiLo	Silt loam		
13 - 20	10YR 3/1	97	10YR 3/6	3	С	Μ	CILo	Clay loam		
. <u> </u>										
								21		
	oncentration, D=Dep					ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. dicators for Problematic Hydric Soils <sup>3</sup> :		
	Indicators: (Applic	able to all			tea.)			-		
	. ,		Sandy Redox				_	2 cm Muck (A10) Red Parent Material (TF2)		
Black His	ipedon (A2)		Stripped Mat Loamy Muck			MIRA 1)				
	n Sulfide (A4)		Loamy Gleye	•				,		
	Below Dark Surface	e (A11)	Depleted Ma		-)					
	rk Surface (A12)	( )	Redox Dark		)		<sup>3</sup> In	dicators of hydrophytic vegetation and		
🔲 Sandy M	ucky Mineral (S1)		Depleted Dark Surface (F7)					wetland hydrology must be present,		
🔲 Sandy G	leyed Matrix (S4)		Redox Depre	ssions (F8)				unless disturbed or problematic.		
	Layer (if present):									
Type: No										
Depth (in	<sub>ches):</sub> N/A						Hydri	c Soil Present? Yes 🗵 No 🗌		
Remarks:										
Hydric soil	criteria met thro	uah indic	ator F6.							
HYDROLO	GY									
Wetland Hy	drology Indicators:									
Primary India	cators (minimum of o	ne require	d; check all that a	pply)				Secondary Indicators (2 or more required)		
Surface V	Water (A1)		Water-S	stained Leav	/es (B9) ( <b>e</b>	xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,		
🗴 High Wa	ter Table (A2)		1, 2,	4A, and 4E	3)			4A, and 4B)		
Saturatio	on (A3)		🔲 Salt Cru	ist (B11)				Drainage Patterns (B10)		
U Water M	arks (B1)		Aquatic	Invertebrate	es (B13)			Dry-Season Water Table (C2)		
Sedimen	t Deposits (B2)		🗌 Hydroge	en Sulfide O	dor (C1)			Saturation Visible on Aerial Imagery (C9)		
🗌 Drift Dep	osits (B3)			d Rhizosphe	eres along	Living Roo	ots (C3)	Geomorphic Position (D2)		
🗌 Algal Ma	t or Crust (B4)		Presence	e of Reduce	ed Iron (C4	4)		Shallow Aquitard (D3)		
Iron Dep	osits (B5)		Recent	Iron Reducti	ion in Tille	d Soils (C6	i)	FAC-Neutral Test (D5)		
Surface	Soil Cracks (B6)		Stunted	or Stressed	l Plants (D	1) ( <b>LRR A</b> )	)	Raised Ant Mounds (D6) (LRR A)		
Inundation	on Visible on Aerial I	magery (B7	7) 🗌 Other (E	Explain in Re	emarks)			Frost-Heave Hummocks (D7)		
Sparsely	Vegetated Concave	Surface (E	38)							
Field Obser	vations:									

Field Observations:							
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None				
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): <u>6 / None</u>				
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): <u>6 / None</u>	Wetland Hydrology Present? Yes 🗵 No 🗌			
Describe Recorded Data (stre	am gauge	, monitori	ng well, aerial photos, previous inspec	tions), if available:			
Monitoring Well (MP-7) location supports 5 consecutive weeks of high groundwater table during growing season.							
Remarks:							
Wetland hydrology criteria met through primary indicator A2 during well install in March 2019 and throughout the growing							

season, and through secondary indicators C9 and D2 during June 2019 delineation. Hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting wetland hydrology criteria.

Project/Site: 1244.001 - Puget Western	City/County: C	hehalis / Lewis	Sampling Date: <u>3/6/19 &amp; 6/28/19</u>
Applicant/Owner: Puget Western		State: WA	Sampling Point: <u>MP-8</u>
Investigator(s): Erin Harker, Ryan Krapp	Sect	ion, Township, Range: <u>11,</u>	13 N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor	Local relief (co	ncave, convex, none): <u>Nor</u>	ne Slope (%): 0
Subregion (LRR): <u>A2</u>	Lat: 46.622402	Long: -122.8985	56864 Datum: WGS 84
Soil Map Unit Name: Reed silty clay loam		NWI class	sification: PEMA
Are climatic / hydrologic conditions on the site typical for this	time of year? Yes 🗌 No		
Are Vegetation, Soil, or Hydrology signi	ficantly disturbed?	Are "Normal Circumstances"	' present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology natur	ally problematic? (I	f needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s	howing sampling po	oint locations, transe	cts, important features, etc.
Hydrophytic Vegetation Present? Yes 🗵 No 🗌	ls the Sa	mpled Area	
Hydric Soil Present? Yes 🗙 No 🗌		•	🛛 No 🗌
Wetland Hydrology Present? Yes 🗵 No 🗌	within a		

Remarks: All three wetland criteria met. Data collected in Wetland W. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-8) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Tatal Number of Dominant
3				Total Number of Dominant Species Across All Strata: 2 (B)
4				
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5.		·		FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Phalaris arundinacea	70	Yes	FACW	Column Totals: (A) (B)
2. Lotus corniculatus	20	Yes	FAC	
3. Juncus effuses	5	No	FACW	Prevalence Index = B/A =
4. Agrostis capalaris	5	No	FAC	Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				Wetland Non-Vascular Plants <sup>1</sup>
11		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
····	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )		- 101010		be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
_	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: Hydrophytic vegetation criteria met thro	ouah dom	ninance to	est. Vege	tation data collected during June 2019
investigation.			· • • 90	

Profile Desc	cription: (Describ	be to the de	epth nee	ded to docur	nent the	indicator	or confi	rm the a	bsenc	e of indicators.)
Depth	Matrix				x Feature					
(inches)	Color (moist)	<u>%</u>		(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Text		Remarks
0 - 13	10YR 3/1	95	5YR		5	С	М	SiLo		Silt loam
13 - 20	10YR 4/1	97	10Y	R 5/6	3	С	М	CILC	)	Clay loam
<sup>1</sup> Type: C=C	oncentration, D=D	epletion RI	M=Redu	ced Matrix CS	S=Covere	d or Coat	ed Sand	Grains	<sup>2</sup>	ocation: PL=Pore Lining, M=Matrix.
	Indicators: (App									tors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		🗌 Sa	andy Redox (S	65)				□ 2 c	m Muck (A10)
	pipedon (A2)			ripped Matrix	-				🗌 Re	d Parent Material (TF2)
🔲 Black His	stic (A3)		🗌 Lo	amy Mucky M	lineral (F	1) ( <b>excep</b>	t MLRA 1	I)	🗌 Ve	ry Shallow Dark Surface (TF12)
	n Sulfide (A4)			amy Gleyed I		2)			🗌 Oth	ner (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		epleted Matrix					_	
	ark Surface (A12)			edox Dark Sur	· · ·			:		tors of hydrophytic vegetation and
-	Sandy Mucky Mineral (S1)  Depleted Dark Surface (F7)						land hydrology must be present,			
-	leyed Matrix (S4)			edox Depressi	ions (F8)				unle	ess disturbed or problematic.
Type: NC	Layer (if present)	:								
	<sub>ches):</sub> N/A								luia Ca	
								Нус	iric So	il Present? Yes 🗵 No 🗌
Remarks:				-0						
Hydric soil	criteria met th	rough ind	icator I	-6.						
HYDROLO	GY									
Wetland Hy	drology Indicator	'S:								
Primary Indic	cators (minimum o	f one requi	ed; chec	k all that appl	y)				Sec	ondary Indicators (2 or more required)
Surface	Water (A1)		[	] Water-Stai	ned Leav	es (B9) ( <b>e</b>	except M	LRA	<u>ا</u>	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	iter Table (A2)			1, 2, 4/	A, and 4E	3)				4A, and 4B)
Saturation	on (A3)		[	Salt Crust	(B11)					Drainage Patterns (B10)
🔲 Water M	arks (B1)		[	Aquatic Inv	/ertebrate	es (B13)				Dry-Season Water Table (C2)
Sedimen	nt Deposits (B2)			] Hydrogen	Sulfide O	dor (C1)				Saturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		[	Oxidized R	hizosphe	res along	Living Ro	oots (C3)		Geomorphic Position (D2)
	at or Crust (B4)		[	] Presence of	of Reduce	ed Iron (C	4)			Shallow Aquitard (D3)
-	osits (B5)		[	Recent Iro	n Reducti	on in Tille	d Soils (0	C6)		FAC-Neutral Test (D5)
	Soil Cracks (B6)		[	Stunted or						Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	l Imagery (I	37)	Other (Exp			, (	,		Frost-Heave Hummocks (D7)
	Vegetated Conca	•••	,	、 I		,			_	× ,
Field Obser	ų		. /							
Surface Wat		Yes 🗌 🛛	No 🗙	Depth (inches	<sub>s):</sub> None	<b>;</b>				
Water Table				Depth (inches	/ -					

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

Yes 🗵 No 🗌

Monitoring Well (MP-8) location supports 3 consecutive weeks of high groundwater table during growing season.

Depth (inches): 20 / None

#### Remarks:

Saturation Present?

Hydrology criteria met through secondary indicators D2 and D5 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Wetland Hydrology Present? Yes 🗵 No 🗌

Project/Site: 1244.001 - Puget Western	City	/County: Chehalis / Lew	/is	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State		Sampling Point: MP-9
Investigator(s): Erin Harker, Ryan Krapp		Section, Township,	Range: <u>11, 13 I</u>	N, 02 W
Landform (hillslope, terrace, etc.): <u>Hillslope</u>	Lc	cal relief (concave, convex,		_
Subregion (LRR): <u>A2</u>	Lat:46.62	2700 Long:	-122.8990775	6 Datum: WGS 84
Soil Map Unit Name: <u>Reed silty clay loam</u>			NWI classificat	ion: N/A
Are climatic / hydrologic conditions on the site typ	pical for this time of year?			
Are Vegetation, Soil, or Hydrology	significantly disturb	ed? Are "Normal Cire	cumstances" pres	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problemat	ic? (If needed, expla	in any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach s	ite map showing sa	mpling point locatior	ns, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes [	_ No 🗵	Is the Sampled Area		
Hydric Soil Present? Yes [	No 🗵	within a Wetland?	Yes 🗍 No	
Wetland Hydrology Present? Yes [	No 🗵			
Remarks: No wetland criteria met. Data collected upslope of V location; monitoring data utilized to support hydrolo	-			

during the June investigation and throughout the monitoring period.

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

	Abaaluta	Densinen	Indicator	Deminence Test worksheet	
Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Species?	t Indicator Status	Dominance Test worksheet:	
1				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 2	(B)
4					
	0	= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u>	(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				That Ale OBE, I AGW, OF FAC. <u>0070</u>	(ҲЉ)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multip	<u>bly by:</u>
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
0	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: 10 ft)	<u> </u>		Jover	UPL species x 5 =	
1 Schedonorus arundinaceus	50	Yes	FAC		
2. Anthoxanthum odoratum	25	Yes	FACU	Column Totals: (A)	(B)
3. Dactylis glomerata	10	No	FACU	Prevalence Index = B/A =	
4. Agrostis capalaris	10	No	FAC	Hydrophytic Vegetation Indicators:	
5. Holcus lanatus	5	No	FAC	Rapid Test for Hydrophytic Vegetation	on
6		·		☐ Dominance Test is >50%	
7				☐ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide	supporting
9				data in Remarks or on a separat	e sheet)
10				☐ Wetland Non-Vascular Plants <sup>1</sup>	
11		·		Problematic Hydrophytic Vegetation	<sup>1</sup> (Explain)
····	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydric soil and wetland hydric soil and wetland hydric solution hydri hydric solution	
Woody Vine Stratum (Plot size: 30 ft)		- 10tai C	00001	be present, unless disturbed or problem	atic.
1					
2		·		Hydrophytic	
	0	= Total C	over	Vegetation Present? Yes No X	
% Bare Ground in Herb Stratum 0					
Remarks: No hydrophytic vegetation criteria met	Prevaler	nce Index	c not warr	anted due to combined lack of by	dric soils and
i to nyaropnytio vogotation ontona mot		100 1100/	thot wan	ance are to combined lack of hyt	

wetland hydrology.

Profile Desc	ription: (Describ	e to the de	pth ne	eded to docun	nent the i	ndicator	or confirm	n the al	osence	of indicators.)
Depth	Matrix			Redo	x Features					
(inches)	Color (moist)	<u>%</u>	<u>Colo</u>	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ire	Remarks
0 - 9	10YR 2/2	100	-		-			SiLo		Silt loam
9 - 18	10YR 4/2	57	10\	/R 4/6	5	С	Μ	CILo		Clay loam; mixed matrix
	10YR 2/2	38						CILo		Clay loam; mixed matrix
							·			
							·			
<sup>1</sup> Type: C=Co	oncentration, D=De	epletion, RN	/I=Red	uced Matrix, CS	=Covered	or Coate	d Sand G	rains.	<sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
	ndicators: (Appl									rs for Problematic Hydric Soils <sup>3</sup> :
Histosol (	(A1)			Sandy Redox (S	5)			E	] 2 cm	Muck (A10)
	ipedon (A2)			Stripped Matrix (	. ,			Ľ		Parent Material (TF2)
Black His	. ,			oamy Mucky M		) (except	MLRA 1)	[	-	Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed N	. ,			E	] Othe	r (Explain in Remarks)
	Below Dark Surfa	ce (A11)		Depleted Matrix Redox Dark Sur				3	Indiaata	re of hydrophytic versition and
	rk Surface (A12) ucky Mineral (S1)			Cedox Dark Sur	· · ·	7)				rs of hydrophytic vegetation and nd hydrology must be present,
	leyed Matrix (S4)			Redox Depressi	•	)				s disturbed or problematic.
•	ayer (if present):				( )					
Type: NO										
Depth (ind	hes): <u>N/A</u>							Hydi	ric Soil	Present? Yes 🗌 No 🗵
Remarks:								-		
No hydric s	oil criteria met	_								
		-								
HYDROLO	GY									
	Irology Indicators									
-	ators (minimum of		ad: che	ack all that apply	۵				Secon	dary Indicators (2 or more required)
	Vater (A1)	one require	su, one	Water-Stair		c (B0) (or	cont MLE	<b>.</b>		ater-Stained Leaves (B9) (MLRA 1, 2,
	er Table (A2)				, and 4B)		Cept MLr	<b>V</b> A		4A, and 4B)
Saturatio	. ,			Salt Crust (						ainage Patterns (B10)
Water Ma				Aquatic Inv		(B13)				y-Season Water Table (C2)
	t Deposits (B2)			Hydrogen S		. ,				aturation Visible on Aerial Imagery (C9)
	osits (B3)			Oxidized R			ivina Roo	ts (C3)	_	eomorphic Position (D2)
	t or Crust (B4)					-	-			nallow Aquitard (D3)
	osits (B5)			Recent Iror		•	,	)	_	C-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or			-			aised Ant Mounds (D6) ( <b>LRR A</b> )
	n Visible on Aerial	Imagery (E	37)	Other (Expl		•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			ost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	ve Surface	(B8)							
Field Observ	vations:									
Surface Wate	er Present?	Yes 🗌 🛛 N	lo 🗙	Depth (inches	): None					
Water Table	Present?		lo 🗙	Depth (inches						
Saturation Pr			lo 🗙	Depth (inches			Wetl	and Hv	drology	/ Present? Yes 🗌 No 🗵
(includes cap	illary fringe)				-					
	corded Data (strea									
-	vveii (MP-9) lo	cation did	a not	nave 3 conse	ecutive v	veeks c	or high gr	round	water ta	able during growing season.
Remarks:										

No wetland hydrology criteria was met during the June 2019 investigation or in March 2019 during well install. Hydrology monitoring indicates that this area is not saturated for long enough during the growing season to meet any wetland hydrology criteria.

Project/Site: 1244.001 - Puget Western	City/County:	Chehalis / Lewis	s s	ampling Date: <u>3/6/19 &amp; 6/28/19</u>
Applicant/Owner: Puget Western		State:	WA s	ampling Point: MP-10
Investigator(s): Erin Harker, Ryan Krapp	S	Section, Township, Ra	ange: <u>11, 13 N</u> ,	02 W
Landform (hillslope, terrace, etc.): Hill				Slope (%): <u>5</u>
Subregion (LRR): <u>A2</u>	Lat: 46.623719	Long:	122.90084615	Datum: WGS 84
Soil Map Unit Name: Reed silty clay loam			NWI classificatio	n: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical for	r this time of year? Yes 🗌			
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circu	mstances" preser	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology r	naturally problematic?	(If needed, explain	any answers in R	emarks.)
SUMMARY OF FINDINGS – Attach site ma	ap showing sampling	point locations	, transects, ir	nportant features, etc.
Hydrophytic Vegetation Present? Yes 🗵 No		Compled Area		
Hydric Soil Present? Yes ⊠ No		Sampled Area	Yes 🛛 No [	-
Wetland Hydrology Present? Yes 🗵 No				
Remarks: All three wetland criteria met. Data collected in Wetland A. Ve	egetation was mowed at initial well instal	llation, updated vegetation da	a collected during June s	ite visit. Monitoring well (MP-10)

All three wetland criteria met. Data collected in Wetland A. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-10) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during during the June investigation and throughout the monitoring period.

	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
1				$\frac{1}{2}$
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4	0			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3.				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
···	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )		rotar o	0001	UPL species x 5 =
1. Phalaris arundinacea	50	Yes	FACW	Column Totals: (A) (B)
2. Schedonorus arundinaceus	20	Yes	FAC	
3. Holcus lanatus	10	No	FAC	Prevalence Index = B/A =
4. Anthoxanthum odoratum	10	No	FACU	Hydrophytic Vegetation Indicators:
5				Rapid Test for Hydrophytic Vegetation
6				☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				☐ Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				☐ Wetland Non-Vascular Plants <sup>1</sup>
11		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	90	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				be present, unless disturbed of problematic.
1		·		Hydrophytic
2		·		Vegetation
10	0	= Total C	over	Present? Yes 🗵 No 🗌
% Bare Ground in Herb Stratum <u>10</u>				
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est. Vege	tation data collected during June 2019
investigation.	-		5	-

	ription: (Descril		depth n				or confirm	n the at	osence	e of indicators.)
Depth (inches)	Matrix Color (moist)	<u>«</u> %		Re pr (moist)	dox Featur %	<u>es</u> Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
<u>(incries)</u> 0 - 15	10YR 2/1	93		5 4/6 YR	7	C	M	SiLo		Silt loam
15 - 20	10YR 4/1	93	7.5	5/6 YR	7	C	М	CILo		Clay loam
10 20				0,011						
	oncentration, D=D			luced Metrix			ad Sand C	roino	21.0	cation: PL=Pore Lining, M=Matrix.
	Indicators: (App						eu Sanu G			ors for Problematic Hydric Soils <sup>3</sup> :
Histosol				Sandy Redox		,				n Muck (A10)
	ipedon (A2)			Stripped Matr				Ē		Parent Material (TF2)
Black His				Loamy Mucky	/ Mineral (F	1) (excep	t MLRA 1)	Ľ	] Very	y Shallow Dark Surface (TF12)
_ , 0	n Sulfide (A4)			Loamy Gleye		2)		Ľ	] Othe	er (Explain in Remarks)
	Below Dark Surfa	ace (A11)		Depleted Mat	. ,	<b>、</b>		3		
	rk Surface (A12) ucky Mineral (S1)			Redox Dark S Depleted Darl		,		°.		ors of hydrophytic vegetation and and hydrology must be present,
	leyed Matrix (S4)			Redox Depres	•	,				ss disturbed or problematic.
	Layer (if present)	):			()					
Type: NO				_						
Depth (ind	ches): <u>N/A</u>			-				Hydı	ric Soil	l Present? Yes 🗵 No 🗌
Remarks:										
Hvdric soil	criteria met th	rouah ir	dicato	rs A12 and	F6.					
<b>,</b>		5								
HYDROLO	GV									
	drology Indicator	re.								
-	cators (minimum c		uired: ch	eck all that an	(vlad				Seco	ndary Indicators (2 or more required)
Surface \				Water-S		ves (B9) ( <b>e</b>	except MLF	RA		Vater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				4A, and 4I					4A, and 4B)
☐ Saturatio				Salt Cru	•	,			DD	prainage Patterns (B10)
Water Ma	arks (B1)			Aquatic	Invertebrate	es (B13)				Pry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydroge	n Sulfide C	dor (C1)			🗆 s	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)				l Rhizosphe	eres along	Living Roc	ots (C3)	×G	Geomorphic Position (D2)
Algal Ma	t or Crust (B4)			Presenc	e of Reduc	ed Iron (C	4)		🗆 s	hallow Aquitard (D3)
Iron Dep	osits (B5)			Recent I	ron Reduct	ion in Tille	d Soils (C6	3)	🗆 E.	AC-Neutral Test (D5)
Surface S	Soil Cracks (B6)			Stunted	or Stressed	d Plants (D	01) ( <b>LRR A</b>	.)	🗌 R	aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria			Other (E	xplain in R	emarks)			🗌 F	rost-Heave Hummocks (D7)
	Vegetated Conca	ave Surfac	ce (B8)							
Field Obser					Non	0				
Surface Wate		Yes 🗌	No 🗙	Depth (inch						
Water Table	Present?	Yes 🗙	No 🗌	Depth (inch						
Saturation P		Yes 🗙	No 🗌	Depth (inch	nes): 18 /	None	Wet	land Hy	drolog	ıy Present? Yes 🗵 No 🗌
(includes cap Describe Re	corded Data (strea	am daude	. monito	ring well, aeria	al photos, r	previous in	spections).	if availa	able:	
	-			-						ble during growing season.
Remarks:						20.0001				
	riteria met throu	iah seco	ndarv ir	dicators C2	and D2 d	lurina Jur	ne 2019 d	elineati	on. A	water table was observed in March
										gy monitoring indicates that this are
										y indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	City/County:	Chehalis / Lew	is	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State	WA	Sampling Point: MP-11
Investigator(s): Erin Harker, Ryan Krapp	s	Section, Township, F	Range: <u>11, 13 N</u>	N, 02 W
Landform (hillslope, terrace, etc.): Hillslope	Local relief	(concave, convex,	none): <u>concave</u>	Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u>	Lat: 46.624970	Long:	-122.9030215	8 Datum: WGS 84
Soil Map Unit Name: Reed silty clay loam			NWI classificat	ion: N/A
Are climatic / hydrologic conditions on the site typical f	for this time of year? Yes 🗌	No 🕱 (If no, expl	ain in Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circ	umstances" prese	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	_ naturally problematic?	(If needed, explai	n any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site n	nap showing sampling	point location	s, transects,	important features, etc.
Hydrophytic Vegetation Present?Yes ⋈ NHydric Soil Present?Yes ⋈ NWetland Hydrology Present?Yes ⋈ N	lo 🗌 withir	e Sampled Area n a Wetland?	Yes 🗵 No	
Remarks:	Vegetation was mowed at initial well insta	lation undated vegetation	data collected during Jun	e site visit Monitoring well (MP 11)

IdINS. All three wetland criteria met. Data collected in Wetland D. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-11) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was slightly below average at 58 percent of normal during the June investigation and throughout the monitoring period.

	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u> )		Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: $2$ (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u> )				Duranda na haday wanka baata
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )	05	Maa	<b>F</b> A <b>O</b>	UPL species x 5 =
1. Agrostis capillaris	65	Yes	FAC	Column Totals: (A) (B)
2. Ranunculus repens	20	Yes	FAC	
3. Phleum pratense	5	No	FAC	Prevalence Index = B/A =
4. Anthoxanthum odoratum	5	No	FACU	Hydrophytic Vegetation Indicators:
5. Ranunculus flammula	5	No	FACW	Rapid Test for Hydrophytic Vegetation
6				☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8.				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
				Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.
1				
				Hydrophytic
2				Vegetation
	0	- Total C	`ovor	
% Bare Ground in Herb Stratum _0	0	= Total C	Cover	Present? Yes 🗵 No 🗌
Pomarka:	0			

Profile Desc	cription: (Describe)	to the dept	h needed to doc	ument the	e indicator	or confirm	n the ab	sence of indicators.)
Depth	Matrix			lox Featu		••••••		
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e Remarks
0 - 7	10YR 2/2	99	5YR 3/4	1	С	Μ	SiLo	Silt loam
7 - 17	10YR 3/1	93	7.5 YR 3/4	7	С	М	CILo	Clay loam
17 - 20	10YR 5/1	95	10YR 4/6	5	С	Μ	CILo	Clay loam
	oncentration, D=Dep					ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic				oted.)		In	dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol		[	Sandy Redox					] 2 cm Muck (A10)
	pipedon (A2)	[	Stripped Matri	. ,				- ( )
Black Hi		l	Loamy Mucky			t MLRA 1)	L	Very Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed	•	-2)		L	] Other (Explain in Remarks)
-	Below Dark Surface		Depleted Matr				2.	
	ark Surface (A12)	l	Redox Dark S		,		lr	ndicators of hydrophytic vegetation and
	lucky Mineral (S1)	Depleted Dark Surface (F7)					wetland hydrology must be present,	
	ileyed Matrix (S4) Layer (if present):	l	Redox Depres	sions (F8	)		1	unless disturbed or problematic.
Type: No								
	<sub>ches):</sub> N/A						المراجع الم	
							Hyar	ic Soil Present? Yes 🗵 No 🗌
Remarks:			. =0					
Hydric soil	criteria met throu	ugh indica	itor F6.					
HYDROLO	GY							
-	drology Indicators:							
Primary Indi	cators (minimum of o	ne required;	check all that ap	ply)				Secondary Indicators (2 or more required)
Surface	( )		Water-St			except MLI	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)		1, 2, 4	4A, and 4	B)			4A, and 4B)
Saturation	on (A3)		Salt Crus	t (B11)				Drainage Patterns (B10)
🔲 Water M	arks (B1)		Aquatic I	nvertebrat	tes (B13)			Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)		Hydroger	n Sulfide (	Odor (C1)			Saturation Visible on Aerial Imagery (C9)
	oosits (B3)					Living Roc	ots (C3)	Seomorphic Position (D2)
-	it or Crust (B4)			•	ced Iron (C	U	. ,	☐ Shallow Aquitard (D3)
	osits (B5)				-	d Soils (C6	5)	☐ FAC-Neutral Test (D5)
-	Soil Cracks (B6)					01) ( <b>LRR A</b>	,	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial Ir	magerv (B7)		kplain in R		, (=	,	Frost-Heave Hummocks (D7)
	Vegetated Concave				,			
	0		- /					

Field Observations:				
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None	
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): 24 / None	
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): 24 / None	Wetland Hydrology Present? Yes 🗵 No 🗌
Describe Recorded Data (stre	am gauge	, monitori	ng well, aerial photos, previous inspec	tions), if available:
Monitoring Well (MP-11)	location	suppo	rts 3 consecutive weeks of high	n groundwater table during growing season.
Remarks:				
I hudura la avi anita ria un at there			disaters 00 and D0 during lungs 00	040 delineation. A water table was absented in March

Hydrology criteria met through secondary indicators C9 and D2 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western Ci	ity/County: Chehalis / Lewis	_ Sampling Date: <u>3/6/19 &amp; 6/28/19</u>
Applicant/Owner: Puget Western	State: WA	Sampling Point: MP-12
Investigator(s): Erin Harker, Ryan Krapp	Section, Township, Range: <u>11, 13</u>	N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor	_ocal relief (concave, convex, none): <u>None</u>	
Subregion (LRR): <u>A2</u> Lat: <u>46.6</u>	25444 Long: -122.903850	01
Soil Map Unit Name: Reed silty clay loam	NWI classifica	ation: N/A
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 distu	rbed? Are "Normal Circumstances" pre	sent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problems	atic? (If needed, explain any answers i	n Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	ampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present?       Yes X       No          Hydric Soil Present?       Yes X       No          Wetland Hydrology Present?       Yes X       No	Is the Sampled Area within a Wetland? Yes 🗵 N	10 🗌
Remarks: All three wetland criteria met. Data collected in Wetland D. Vegetation was mowed at i	nitial well installation, updated vegetation data collected during J	une site visit. Monitoring well (MP-12)

All three wetland criteria met. Data collected in Wetland D. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-12) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2		. <u></u>		Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4		. <u> </u>		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )	05			UPL species x 5 =
1. Agrostis capillaris	35	Yes	FAC	Column Totals: (A) (B)
2. Holcus lanatus	30	Yes	FAC	
3. Ranunculus repens	15	No	FAC	Prevalence Index = B/A =
4. Dactylis glomerata	15	No	FACU	Hydrophytic Vegetation Indicators:
5. Anthoxanthum odoratum	5	No	FACU	Rapid Test for Hydrophytic Vegetation
6				☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9			. <u> </u>	$\square$ Wetland Non-Vascular Plants <sup>1</sup>
10		. <u> </u>		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11		. <u> </u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.
1				
2				Hydrophytic Verstation
<u> </u>	0	= Total C	over	Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum 0		, etai e		
Remarks: Hydrophytic vegetation criteria met thro	ugh dom	ninance te	est Vege	tation data collected during June 2019
investigation.	agn aon			

Profile Desc	ription: (Describe	to the dep	th needed to doc	ument the	indicator	or confirm	n the abs	sence of indicators.)
Depth	Matrix		Red	dox Feature	es			
<u>(inches)</u>	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	
0 - 15	10YR 3/1	95	5YR 3/4	5	C	Μ	SiLo	Silt loam
15 - 18	10YR 4/1	93	5YR 3/4	7	С	Μ	SiCILo	Silty clay loam
					-			
		·						
		·						·
	oncentration, D=Dep	lotion DM	-Reduced Matrix		d or Coot	ad Sand C	raina	<sup>2</sup> l agetion: BL-Bara Liping M-Matrix
	Indicators: (Applic					eu Sanu G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. dicators for Problematic Hydric Soils <sup>3</sup> :
			□ Sandy Redox		coul,			2 cm Muck (A10)
	ipedon (A2)		Stripped Matri					
Black His			Loamy Mucky	. ,	1) ( <b>excep</b> t	MLRA 1)	_	
	n Sulfide (A4)		Loamy Gleyed			,		-
Depleted	Below Dark Surface	e (A11)	Depleted Mat	ix (F3)				
	rk Surface (A12)		Redox Dark S	• • •			<sup>3</sup> In	dicators of hydrophytic vegetation and
	ucky Mineral (S1)		Depleted Dark	•	=7)			wetland hydrology must be present,
	leyed Matrix (S4)		Redox Depres	sions (F8)				unless disturbed or problematic.
Type: NC	Layer (if present):							
	ches): <u>N/A</u>							
Depth (in	ches).						Hydri	c Soil Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	criteria met thro	ugh indic	ator F6.					
	<u>~</u> V							
HYDROLO								
-	drology Indicators:							
	cators (minimum of o	one require	·					Secondary Indicators (2 or more required)
Surface	( )		Water-St			xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
-	ter Table (A2)			4A, and 4E	3)			4A, and 4B)
Saturatio			Salt Crus					Drainage Patterns (B10)
□ Water M	. ,		Aquatic I		· · /			Dry-Season Water Table (C2)
	t Deposits (B2)		_ • •	n Sulfide O	. ,			Saturation Visible on Aerial Imagery (C9)
	osits (B3)			Rhizosphe	-	-	ots (C3)	Geomorphic Position (D2)
-	t or Crust (B4)		—	e of Reduce	``	,		Shallow Aquitard (D3)
	osits (B5)			on Reduct		```	,	FAC-Neutral Test (D5)
	Soil Cracks (B6)			or Stressed	•	1) ( <b>LRR A</b>	)	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial I	•••	, ,	xplain in Re	emarks)			Frost-Heave Hummocks (D7)
	Vegetated Concave	Surface (E	38)					
Field Obser	vations:							

Field Observations:					
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None		
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): 24 / None		
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): 24 / None	Wetland Hydrology Present?	Yes 🗵 No 🗌
Describe Recorded Data (stre	am gauge	, monitor	ing well, aerial photos, previous inspec	tions), if available:	
Monitoring Well (MP-12)	location	suppo	rts 3 consecutive weeks of high	n groundwater table during g	growing season.
Remarks:					
Hvdrology criteria met thro	uah seco	ndarv in	dicators C9 and D2 during June 20	019 delineation. A water table	was observed in Marc

Hydrology criteria met through secondary indicators C9 and D2 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	City/County:	Chehalis / Lewis	Samplir	ng Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State: WA	Samplir	ng Point: <u>MP-13</u>
Investigator(s): Erin Harker, Ryan Krapp	S	ection, Township, Range:	11, 13 N, 02 V	V
Landform (hillslope, terrace, etc.): Hill or Valley Floor		(concave, convex, none): <u> </u>		
Subregion (LRR): <u>A2</u> Lat				
Soil Map Unit Name: Reed silty clay loam		NWI (	classification: <u>N/</u>	Α
Are climatic / hydrologic conditions on the site typical for this time	_	_		
Are Vegetation, Soil, or Hydrology significan	ntly disturbed?	Are "Normal Circumstan	ces" present? Ye	es 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally p	problematic?	(If needed, explain any ar	nswers in Remark	s.)
SUMMARY OF FINDINGS – Attach site map show	wing sampling	point locations, trar	isects, impor	tant features, etc.
Hydrophytic Vegetation Present?       Yes X       No          Hydric Soil Present?       Yes X       No          Wetland Hydrology Present?       Yes X       No		Sampled Area	es 🗵 No 🗌	
Remarks: All three wetland criteria met. Data collected in Wetland F. Vegetation was location; monitoring data utilized to support hydrology determination. While				

#### June investigation and throughout the monitoring period.

		Dominant		Dominance Test worksheet:
ree Stratum (Plot size: <u>30 ft</u> )		Species?		Number of Dominant Species
·				That Are OBL, FACW, or FAC: 2 (/
<u> </u>				Total Number of Dominant
3				Species Across All Strata: 2 (E
	^	= Total C		Percent of Dominant Species
apling/Shrub Stratum (Plot size: 30 ft)	<u> </u>		over	That Are OBL, FACW, or FAC: <u>100%</u> (A
· `				Prevalence Index worksheet:
·				Total % Cover of:Multiply by:
				OBL species x 1 =
·				FACW species x 2 =
				FAC species x 3 =
	0	= Total C		FACU species x 4 =
lerb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
Agrostis capillaris	35	Yes	FAC	Column Totals: (A)
Phalaris arundinacea	20	Yes	FACW	
Anthoxanthum odoratum	<u> </u>	No	FACU	Prevalence Index = B/A =
Hypochaeris radicata	10	No	FACU	Hydrophytic Vegetation Indicators:
Holcus lanatus		No	FAC	Rapid Test for Hydrophytic Vegetation
Dactylis glomerata	5	No	FACU	■ Dominance Test is >50%
Juncus effuses	5	No	FACW	□ Prevalence Index is ≤3.0 <sup>1</sup>
B				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				□ Wetland Non-Vascular Plants <sup>1</sup>
0				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1		. <u> </u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology mu
Noody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.
/ \/				
				Hydrophytic
D	0	= Total C	over	Vegetation Present? Yes ⊠ No □
6 Bare Ground in Herb Stratum <u>0</u>		- 10tai C	over	

Depth					mulcator		the absen	ce of indicators.)
	Matrix		-	lox Feature				
<u>(inches)</u>	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 15	10YR 3/1	95	5YR 3/4	5	С	Μ	SiLo	Silt loam
15 - 19	7.5YR 4/1	93	10YR 6/6	7	С	М	SiCILo	Silty clay loam
			· · · · · · · · · · · · · · · · · · ·					
17								
			M=Reduced Matrix, ( III LRRs, unless oth			ed Sand Gr		Location: PL=Pore Lining, M=Matrix.
Histosol					ieu.)			-
	oipedon (A2)		Sandy Redox					cm Muck (A10) ed Parent Material (TF2)
Black His			Loamy Mucky	· · /	1) ( <b>excep</b> t	MLRA 1)		ery Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed			,		her (Explain in Remarks)
Depleted	d Below Dark Surfac	e (A11)	Depleted Matr	ix (F3)				
	ark Surface (A12)		Redox Dark S	• •				ators of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark		=7)			tland hydrology must be present,
	leyed Matrix (S4)		Redox Depres	sions (F8)			un	ess disturbed or problematic.
Type: No	Layer (if present):							
	ches): <u>N/A</u>						Under a	
							Hydric So	oil Present? Yes 🗵 No 🗌
Remarks:								
Hydric soll	criteria met thro	bugn ind	icator F6.					
L								
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
-			red; check all that ap	ply)			<u>Sec</u>	condary Indicators (2 or more required)
-	cators (minimum of				ves (B9) ( <b>e</b>	xcept MLR		
Primary India	cators (minimum of		☐ Water-St			xcept MLR		condary Indicators (2 or more required) Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b>
Primary India	cators (minimum of Water (A1) Iter Table (A2)		☐ Water-St	ained Leav 4A, and 4E		xcept MLR	<b>A</b>	Water-Stained Leaves (B9) (MLRA 1, 2,
Primary India	cators (minimum of Water (A1) Iter Table (A2)		☐ Water-St 1, 2, 4 ☐ Salt Crus	ained Leav 4A, and 4E	3)	xcept MLR	A []	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Primary India Surface High Wa Saturatio Water Ma	cators (minimum of Water (A1) Iter Table (A2) on (A3)		☐ Water-St 1, 2, 4 ☐ Salt Crus ☐ Aquatic I	ained Leav 4 <b>A, and 4E</b> t (B11)	<b>3)</b> es (B13)	xcept MLR	A 0	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10)
Primary India	cators (minimum of Water (A1) Iter Table (A2) on (A3) arks (B1)		Water-St 1, 2, 4 Salt Crus Aquatic II	ained Leav 4 <b>A, and 4E</b> at (B11) nvertebrate n Sulfide O	<b>3)</b> es (B13) dor (C1)	xcept MLR	A 0	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2)
Primary India Surface V High Wa Saturatic Water Ma Sedimen Drift Dep	cators (minimum of Water (A1) Iter Table (A2) on (A3) arks (B1) It Deposits (B2)		Water-St 1, 2, 4 Salt Crus Aquatic Ii Hydroger	ained Leav 4 <b>A, and 4E</b> at (B11) nvertebrate n Sulfide O	<b>3)</b> es (B13) dor (C1) eres along	Living Root	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Primary India Surface V High Wa Saturatio Water Mi Sedimen Drift Dep Algal Ma	cators (minimum of Water (A1) Iter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3)		Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence	ained Leav 4 <b>A, and 4E</b> (B11) nvertebrate Sulfide O Rhizosphe e of Reduce	<b>3)</b> dor (C1) eres along ed Iron (C4	Living Root	▲ □	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep	cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent Ir	ained Leav 4 <b>A, and 4E</b> (B11) nvertebrate Sulfide O Rhizosphe of Reduce on Reduct	<b>3)</b> dor (C1) eres along ed Iron (C4 ion in Tille	Living Root	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Primary India	cators (minimum of Water (A1) trer Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5)	one requir	Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted o	ained Leav 4 <b>A, and 4E</b> (B11) nvertebrate Sulfide O Rhizosphe of Reduce on Reduct	<b>B)</b> dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D	Living Root ) d Soils (C6)	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely	cators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav	<u>one requir</u> Imagery (l	Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted of B7) Other (E)	ained Leav 4A, and 4E (B11) nvertebrate on Sulfide O Rhizosphe of Reduct on Reduct or Stressec	<b>B)</b> dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D	Living Root ) d Soils (C6)	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )
Primary India Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundation	cators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav	<u>one requir</u> Imagery (l	Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted of B7) Other (E)	ained Leav 4A, and 4E (B11) nvertebrate on Sulfide O Rhizosphe of Reduct on Reduct or Stressec	<b>B)</b> dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D	Living Root ) d Soils (C6)	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )
Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely	cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations:	one requir Imagery (l e Surface Yes □ 1	Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted of B7) Other (Ex (B8)	ained Leav 4 <b>A, and 4E</b> (B11) nvertebrate on Sulfide O Rhizosphe of Reduct on Reduct or Stressec xplain in Re	<b>3)</b> dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Root ) d Soils (C6)	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )
Primary India Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser	cators (minimum of Water (A1) ther Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: ther Present?	one requii Imagery (l e Surface Yes □ I Yes □ I	Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted of B7) Other (Ex (B8)	ained Leav 4A, and 4E 4A, and 4E 4A, and 4E and Sulfide O Rhizosphe of Reduct for Reduct for Reduct for Reduct for Stressec con Reduct for Stressec con Reduct for Stressec con Reduct	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Root ) d Soils (C6) 1) ( <b>LRR A</b> )	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )
Primary India Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser	cators (minimum of Water (A1) ther Table (A2) on (A3) arks (B1) at Deposits (B2) bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: ther Present?	one requir Imagery (l e Surface Yes □ 1	Water-St 1, 2, 4 Salt Crus Aquatic lu Hydroger Oxidized Presence Recent lr Stunted of B7) Other (Ex (B8)	ained Leav 4 <b>A, and 4E</b> (t (B11) nvertebrate on Sulfide O Rhizosphe of Reduct on Reduct or Stressec (plain in Re	B) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Root ) d Soils (C6)	A	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> 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) ( <b>LRR A</b> )

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

Monitoring Well (MP-13) location supports 3 consecutive weeks of high groundwater table during growing season.

#### Remarks:

Hydrology criteria met through secondary indicators D2 and D5 during June 2019 delineation. Hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western City/	County: Chehalis / Lewis	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western	State: WA	Sampling Point: MP-14
Investigator(s): Erin Harker, Ryan Krapp	Section, Township, Range	<u>11, 13 N, 02 W</u>
Landform (hillslope, terrace, etc.): Hill or Valley Floor Loc	al relief (concave, convex, none):	None Slope (%): 2
Subregion (LRR): <u>A2</u>	6227 Long: -122.	90519190 Datum: WGS84
Soil Map Unit Name: Reed silty clay loam	NW	I classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year?	∕es 🔲 No 🕱 (If no, explain in l	Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbe	ed? Are "Normal Circumsta	ances" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic	? (If needed, explain any	answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sar	npling point locations, tra	ansects, important features, etc.
Hydrophytic Vegetation Present?       Yes X       No          Hydric Soil Present?       Yes X       No          Wetland Hydrology Present?       Yes X       No	Is the Sampled Area within a Wetland?	Yes 🗵 No 🗌
Remarks: All three wetland criteria met. Data collected in Wetland F. Vegetation was mowed at initia location; monitoring data utilized to support hydrology determination. While precipitation June investigation and throughout the monitoring period.		

	A I I	Densinger	Le Bernheim	Development Testanologia test
Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator	Dominance Test worksheet:
				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3		·		Species Across All Strata: <u>1</u> (B)
4				Percent of Dominant Species
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				
1		·		Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C		FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )		rotar e		UPL species x 5 =
1. Phalaris arundinacea	50	Yes	FACW	Column Totals:         (A)         (B)
2. Ranunculus repens	15	No	FAC	
3. Anthoxanthum odoratum	10	No	FACU	Prevalence Index = B/A =
4. Holcus lanatus	5	No	FAC	Hydrophytic Vegetation Indicators:
5. Dactylis glomerata	5	No	FACU	Rapid Test for Hydrophytic Vegetation
6. Lotus corniculatus	5	No	FAC	☑ Dominance Test is >50%
7. Agrostis capalaris	5	No	FAC	□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				☐ Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
···	95	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )		- 10tai C	00001	be present, unless disturbed or problematic.
1				
2		·		Hydrophytic
	0	= Total C	over	Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum <u>5</u>		- 10(a) 0		
Remarks:	منيمام مارد بدر	linenes t		totion data callected during lune 2010
	ougn aon	imance t	est. vege	tation data collected during June 2019
investigation.				

		be to the u	epun need	ded to docun	ient the	nuicator	or contirm	the abs	sence	of indicators.)
Depth	Matrix				<u>k Feature</u>					
(inches)	Color (moist)	%	<u>Color (</u>		%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0 - 10	7.5YR 3/1	95	7.5Y	R 3/4	3	С	PL	SiCILo	C	Silty clay loam
			7.5Y	R 5/6	2	С	PL			
10-18	7.5YR 4/1	95	7.5Y	R 5/6	5	С	PL	CILo		Clay loam
					·	·				
					·					
						·				
			<u></u>		·	·				
			<u> </u>		·	<u>.                                    </u>				
<sup>1</sup> Type: C=Co	oncentration, D=D	epletion. R	M=Reduc	ed Matrix. CS	=Covere	d or Coate	ed Sand Gr	ains.	<sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
	Indicators: (App									rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		🗌 Sa	ndy Redox (S	5)				] 2 cm	Muck (A10)
Histic Ep	ipedon (A2)			ipped Matrix (					Red	Parent Material (TF2)
Black His				amy Mucky M			MLRA 1)		-	Shallow Dark Surface (TF12)
	n Sulfide (A4)	<i></i>		amy Gleyed N		)			Othe	· (Explain in Remarks)
	Below Dark Surfa	ace (A11)		pleted Matrix	. ,			31		
	rk Surface (A12) lucky Mineral (S1)			dox Dark Sur pleted Dark S	,	7)		٩I٣		s of hydrophytic vegetation and nd hydrology must be present,
-	leyed Matrix (S4)			dox Depressi		, )				s disturbed or problematic.
	Layer (if present)	:								
Type: NO										
Depth (ind	ches): <u>N/A</u>							Hydri	c Soil	Present? Yes 🗵 No 🗌
Remarks:										
Hvdric soil	criteria met thi	rouah inc	licators	All and F6.						
		•••.g.								
HYDROLO	GY									
	drology Indicator	's:								
-	cators (minimum o									
Surface \		i one requi	red; checl	call that apply	()				Secon	dary Indicators (2 or more required)
	water (AT)					es (B9) ( <b>e</b> :	cept MLR			dary Indicators (2 or more required) ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b>
📋 High Wat	ter Table (A1)	<u>r one requi</u>		] Water-Stair		. , .	ccept MLR			dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ High Wat	ter Table (A2)		C	] Water-Stair	ned Leave , <b>and 4B</b>	. , .	cept MLR		🗌 Wa	ater-Stained Leaves (B9) (MLRA 1, 2,
•	ter Table (A2) on (A3)	<u>i one requi</u>		Water-Stair 1, 2, 4A	ned Leave <b>., and 4B</b> B11)	)	kcept MLR		U Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Saturatio	ter Table (A2) on (A3)	<u>r one requ</u>		] Water-Stair <b>1, 2, 4A</b> ] Salt Crust ( ] Aquatic Inv	ned Leave <b>, and 4B</b> B11) ertebrate	) s (B13)	ccept MLR		Wa     Wa     Dra     Dra     Dra	ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> ainage Patterns (B10)
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> </ul>	ter Table (A2) on (A3) arks (B1)	<u>r one requ</u>		] Water-Stair <b>1, 2, 4A</b> ] Salt Crust ( ] Aquatic Inv	ned Leave , <b>and 4B</b> B11) ertebrate Sulfide Oc	) s (B13) lor (C1)		A	URA	ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> ainage Patterns (B10) y-Season Water Table (C2)
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> <li>Drift Dep</li> </ul>	ter Table (A2) on (A3) arks (B1) t Deposits (B2)	<u>, , , , , , , , , , , , , , , , , , , </u>		Water-Stain <b>1, 2, 4A</b> Salt Crust ( Aquatic Inv Hydrogen S Oxidized R	ned Leave A, <b>and 4B</b> B11) ertebrate Sulfide Oo hizosphe	) s (B13) lor (C1) res along	Living Root	A	Ura Dra Dry Sa X Ge	ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9)
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> <li>Drift Dep</li> <li>Algal Ma</li> </ul>	ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3)	<u>, one requ</u>		Water-Stair <b>1, 2, 4A</b> Salt Crust ( Aquatic Inv Hydrogen S Oxidized R	ned Leave a, <b>and 4B</b> B11) ertebrate Sulfide Oc hizosphei f Reduce	) lor (C1) res along d Iron (C4	Living Root	<b>RA</b> ts (C3)	URAN	ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2)
<ul> <li>Saturatio</li> <li>Water Ma</li> <li>Sedimen</li> <li>Drift Dep</li> <li>Algal Ma</li> <li>Iron Dep</li> <li>Surface S</li> </ul>	ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6)			Water-Stain         1, 2, 4A         Salt Crust (         Aquatic Inv         Hydrogen S         Oxidized R         Presence c	ned Leave a, <b>and 4B</b> B11) ertebrate Sulfide Oo hizosphe f Reduce n Reductio	) lor (C1) res along d Iron (C4 on in Tilled	Living Root ) I Soils (C6)	<b>RA</b> ts (C3)	URANCE WARE URANCE URANCE WARE URANCE WARE URANCE WARE URANCE WARE URANCE WARE	Atter-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio	ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria	ıl Imagery (	E7)	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence o</li> <li>Recent Iror</li> <li>Stunted or</li> </ul>	ned Leave a, <b>and 4B</b> B11) ertebrate Sulfide Oc hizospher f Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tilleo Plants (D	Living Root ) I Soils (C6)	<b>RA</b> ts (C3)	URANCE WARE URANCE URANCE WARE URANCE WARE URANCE WARE URANCE WARE URANCE WARE	Ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely	ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria	ıl Imagery (	E7)	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence o</li> <li>Recent Iror</li> <li>Stunted or</li> </ul>	ned Leave a, <b>and 4B</b> B11) ertebrate Sulfide Oc hizospher f Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tilleo Plants (D	Living Root ) I Soils (C6)	<b>RA</b> ts (C3)	URANCE WARE URANCE URANCE WARE URANCE WARE URANCE WARE URANCE WARE URANCE WARE	Atter-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely Field Observ	ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations:	ıl Imagery ( ve Surface	B7) [ (B8)	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence c</li> <li>Recent Iror</li> <li>Stunted or</li> <li>Other (Expl</li> </ul>	ned Leave a, <b>and 4B</b> B11) ertebrate Gulfide Oc hizosphei f Reduce a Reductio Stressed ain in Re	) lor (C1) res along d Iron (C4 on in Tilleo Plants (D marks)	Living Root ) I Soils (C6)	<b>RA</b> ts (C3)	URANCE WARE URANCE URANCE WARE URANCE WARE URANCE WARE URANCE WARE URANCE WARE	Atter-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely Field Obsern Surface Wate	ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present?	I Imagery ( ve Surface Yes □	B7) C (B8)	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence c</li> <li>Recent Iror</li> <li>Stunted or</li> <li>Other (Expl</li> </ul>	ned Leave a, and 4B B11) ertebrate Sulfide Oc hizospher f Reduce a Reduction Stressed ain in Re ): <u>None</u>	) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Root ) I Soils (C6)	<b>RA</b> ts (C3)	URANCE WARE URANCE URANCE WARE URANCE WARE URANCE WARE URANCE WARE URANCE WARE	Atter-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely Field Observ	ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present?	I Imagery ( ve Surface Yes □	B7) [ (B8)	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence o</li> <li>Recent Iror</li> <li>Stunted or</li> <li>Other (Expl</li> </ul>	ned Leave a, and 4B B11) ertebrate Sulfide Oc hizospher f Reduce n Reduction Stressed ain in Re ): <u>None</u> ): <u>20 / N</u>	) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks) lone	Living Root ) I Soils (C6)	<b>RA</b> ts (C3)	URANCE WARE URANCE URANCE WARE URANCE WARE URANCE WARE URANCE WARE URANCE WARE	Atter-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> )
Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely Field Obsert Surface Wate Water Table Saturation Po	ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present?	I Imagery ( ve Surface Yes □ Yes ⊠	B7) [ (B8)	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence c</li> <li>Recent Iror</li> <li>Stunted or</li> <li>Other (Expl</li> </ul>	ned Leave a, and 4B B11) ertebrate Sulfide Oc hizospher f Reduce n Reduction Stressed ain in Re ): <u>None</u> ): <u>20 / N</u>	) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks) lone	Living Roof ) 1 Soils (C6) 1) ( <b>LRR A</b> )	ts (C3)	<ul> <li>□ Wa</li> <li>□ Dr;</li> <li>□ Dr;</li> <li>□ Sa</li> <li>∞ Ge</li> <li>□ Sh</li> <li>∞ FA</li> <li>□ Ra</li> <li>□ Frc</li> </ul>	Atter-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> )
Saturation Saturation Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundation Sparsely Field Obser Surface Water Vater Table Saturation Ph (includes cap	ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present? present? pillary fringe)	I Imagery ( ve Surface Yes □ Yes ⊠ Yes ⊠	B7) [ (B8) [ No 🛛 1	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iror</li> <li>Stunted or</li> <li>Other (Expl</li> </ul>	hed Leave a, and 4B B11) ertebrate Sulfide Oc hizospher f Reduce a Reduction Stressed ain in Re ): None ): $20 / N$ ): $20 / N$	) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks) lone lone	Living Roof ) 1 Soils (C6) 1) (LRR A)	ts (C3) ) and Hyd	□ Wa □ Dr. □ Sa □ Sh ■ FA □ Fra	ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> ) ost-Heave Hummocks (D7)
Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic Sparsely Field Observ Surface Wate Water Table Saturation Pr (includes cap Describe Ref	ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Conca vations: er Present? Present? Present? pillary fringe) corded Data (street	Il Imagery ( ve Surface Yes ⊡ Yes ⊠ Yes ⊠ am gauge,	B7) [ (B8) No 🛛 1 No 🗌 1 monitoring	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (</li> <li>Aquatic Inv</li> <li>Hydrogen S</li> <li>Oxidized R</li> <li>Presence o</li> <li>Recent Iror</li> <li>Stunted or</li> <li>Other (Expl</li> </ul>	hed Leave a, and 4B B11) ertebrate Sulfide Oc hizosphere f Reduce a Reduction Stressed ain in Re ): <u>None</u> ): <u>20 / N</u> ): <u>20 / N</u>	) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks) lone lone evious ins	Living Roof ) 1 Soils (C6) 1) (LRR A) Wettla	ts (C3) ) and Hyd	Wa Dra Dra Sa Sa Sh Sh FA Ra Prology	ater-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B</b> ) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) ( <b>LRR A</b> ) ost-Heave Hummocks (D7)

Remarks:

Hydrology criteria met through secondary indicators D2 and D5 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Weste	ərn	City/County:	Chehalis / Lewis	S	ampling Date: <u>3/6/19 &amp; 6/28/19</u>
Applicant/Owner: Puget Western			State: W	<u>4</u> s	ampling Point: MP-15
Investigator(s): Erin Harker, Ryan Kra	арр		Section, Township, Range	<sub>e:</sub> 11, 13 N,	02 W
Landform (hillslope, terrace, etc.): Valley	Floor				Slope (%): 0
Subregion (LRR): <u>A2</u>	Lat:	46.625566	Long: -12	2.90520585	Datum: WGS 84
Soil Map Unit Name: Lacamas silt loar	n, 0 to 3 percent slo	opes	NV	VI classificatio	n: <u>N/A</u>
Are climatic / hydrologic conditions on the s	ite typical for this time o				
Are Vegetation, Soil, or Hydro	ology significantl	y disturbed?	Are "Normal Circumst	ances" presen	nt? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydro	ology naturally pr	oblematic?	(If needed, explain any	answers in R	emarks.)
SUMMARY OF FINDINGS – Atta	ch site map show	ing sampling	point locations, tr	ansects, ir	nportant features, etc.
Hydrophytic Vegetation Present?	Yes 🗶 No 🗌	la tha	Somelad Area		
Hydric Soil Present?	Yes 🗵 No 🗌		e Sampled Area n a Wetland?	Yes 🗌 No 🖡	
Wetland Hydrology Present?	Yes 🗌 No 🗙	within			
Remarks: Not all three wetland criteria met; only hydr data collected during June site visit. Monite					

investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2				Total Number of Dominant	
3			<u> </u>	Species Across All Strata: <u>3</u>	(B)
4 Sapling/Shrub Stratum (Plot size: 30 ft)		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u>	(A/B)
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	_
	0	= Total C	over	FACU species x 4 =	_
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =	_
1. Hypochaeris radicata	50	Yes	FACU	Column Totals: (A)	(B)
2. Holcus lanatus	20	Yes	FAC		
3. Agrostis capillaris	20	Yes	FAC	Prevalence Index = B/A =	
4. Anthoxanthum odoratum	10	No	FACU	Hydrophytic Vegetation Indicators:	
5			. <u> </u>	Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is $\leq 3.0^{1}$	
8				Morphological Adaptations <sup>1</sup> (Provide supporti data in Remarks or on a separate sheet)	ng
9				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	1)
11	100	= Total C		<sup>1</sup> Indicators of hydric soil and wetland hydrology m	nust
Woody Vine Stratum (Plot size: <u>30 ft</u> )				be present, unless disturbed or problematic.	
1				Hydrophytic	
2	0			Vegetation	
% Bare Ground in Herb Stratum	0	= Total C	over	Present? Yes 🛛 No 🗌	
Remarks: Hydrophytic vegetation criteria met thro	ough dom	inance t	est due to	a dominance of facultative species typic	al of

upland fields.

Profile Des	cription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirm	the abs	sence of indicators.)
Depth	Matrix		Red	ox Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	
0 - 6	10YR 2/2	100	-	-			SiLo	Silt loam
6 - 13	10YR 3/1	97	2.5YR 3/4	3	С	Μ	SiLo	Silt loam
13 - 18	7.5 YR 4/1	97	10YR 6/6	3	С	Μ	SiLo	Silt loam
		<u> </u>						
	oncentration, D=Dep	letion RM	-Reduced Matrix C	S-Covere	d or Coate	ad Sand Gra	aine	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Applic							dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox (					2 cm Muck (A10)
	oipedon (A2)		Stripped Matrix					
Black Hi			Loamy Mucky	. ,	1) (except	MLRA 1)		
Hydroge								Other (Explain in Remarks)
Depleted	d Below Dark Surface	e (A11)	Depleted Matri	x (F3)				
Thick Dark Surface (A12) Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and								
🔲 Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	-7)			wetland hydrology must be present,
Sandy G	Bleyed Matrix (S4)		Redox Depress	sions (F8)				unless disturbed or problematic.
	Layer (if present):							
Type: No								
Depth (in	ches): N/A						Hydri	c Soil Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	criteria met thro	ugh indi	cator F6.					
-		-						
HYDROLO	GY							
	drology Indicators:							
-	cators (minimum of c		ed: check all that apr	lv)				Secondary Indicators (2 or more required)
Surface						voont MLD	^	Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)		☐ Water-Sta				4	
_ 0	( )			A, and 4E	5)			4A, and 4B)
Saturatio			Salt Crust					Drainage Patterns (B10)
	larks (B1)		Aquatic Ir		. ,			Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
-	oosits (B3)			Rhizosphe	res along	Living Roots	s (C3)	Seomorphic Position (D2)
Algal Ma	at or Crust (B4)		Presence	of Reduce	ed Iron (C4	4)		Shallow Aquitard (D3)
Iron Dep	oosits (B5)		Recent Ire	on Reducti	on in Tille	d Soils (C6)		FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted o	r Stressed	Plants (D	1) ( <b>LRR A</b> )		Raised Ant Mounds (D6) (LRR A)

Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) **Field Observations:** Depth (inches): None Surface Water Present? Yes 🗌 No 🗙 Depth (inches): 30 / None Yes 🗵 No 🗌 Water Table Present? Depth (inches): <u>30 / None</u> Saturation Present? Yes 🗵 No 🗌 Wetland Hydrology Present? Yes 🗌 No 🗵 (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Monitoring Well (MP-15) did not have 2 consecutive weeks of high groundwater table during growing season. Remarks: Wetland hydrology secondary indicators C9 and D2 were observed at the June 2019 delineation. A water table was observed

in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area is not saturated for long enough during the growing season to meet wetland hydrology criteria.

Project/Site: 1244.001 - Puget Wes	tern	City/County:	Chehalis / Lew	/is	Sampling Date: <u>3/6/19 &amp; 6/28/19</u>	
Applicant/Owner: Puget Western			State	<u>wa</u>	Sampling Point: MP-16	
Investigator(s): Erin Harker, Ryan Ki	rapp	s	ection, Township, I	<sub>Range:</sub> <u>11, 13 N</u>	I, 02 W	
Landform (hillslope, terrace, etc.): Valley	y Floor				Slope (%): <u>0</u>	
Subregion (LRR): <u>A2</u>	Lat	46.625173	Long:	-122.9051981	4	
Soil Map Unit Name: Lacamas silt loa	im, 0 to 3 percent s	lopes		_ NWI classificati	on: N/A	
Are climatic / hydrologic conditions on the	site typical for this time	of year? Yes 🗌	No 🗵 (If no, expl	ain in Remarks.)		
Are Vegetation, Soil, or Hyd	rology significan	tly disturbed?	Are "Normal Circ	cumstances" prese	nt? Yes 🗵 No 🗌	
Are Vegetation, Soil, or Hyd	rology naturally p	oroblematic?	(If needed, explai	n any answers in l	Remarks.)	
SUMMARY OF FINDINGS – Att	ach site map shov	ving sampling	point location	is, transects, i	mportant features, etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes 🗙 No 🗌 Yes 🗙 No 🗌 Yes 🕱 No 🗌		Sampled Area a Wetland?	Yes 🗵 No		

Remarks: All three wetland criteria met. Data collected in Wetland I. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-16) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species
1		·		That Are OBL, FACW, or FAC: $\underline{3}$ (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>4</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				
3				OBL species x 1 =
4		·		FACW species x 2 =
5				FAC species x 3 =
Horb Stratum (Plat aiza: 10 ft)	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft)</u> <u>1.</u> Agrostis capillaris	30	Yes	FAC	UPL species x 5 =
2. Symphyotrichum bracteolatum	20	Yes	FAC	Column Totals: (A) (B)
3. Hypochaeris radicata	20	Yes	FACU	Prevalence Index = B/A =
4 Holcus lanatus	20	Yes	FAC	Hydrophytic Vegetation Indicators:
	10	No	FACU	
5. Anthoxanthum odoratum				Rapid Test for Hydrophytic Vegetation
6				Dominance Test is >50%
7				Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				□ Wetland Non-Vascular Plants <sup>1</sup>
10				
11		<u> </u>		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u> )				
1				Hydrophytic
2				Vegetation
% Bare Ground in Herb Stratum 0	0	= Total C	over	Present? Yes 🗵 No 🗌
Remarks:				
Hydrophytic vegetation criteria met thr	ough dom	inance te	est. Vege	tation data collected during June 2019
investigation.				

Profile Des	cription: (Describe	to the de	pth needed to doci	ument th	e indicator	or confirm	1 the abs	ence of indicators.)
Depth	Matrix		Rec	lox Featu	res			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
0 - 6	10YR 2/2	100	-	-	-	-	SiCILo	Silty clay loam
6 - 13	10YR 3/1	95	2.5YR 4/6	5	С	Μ	SiCILo	Silty clay loam
13 - 18	7.5 YR 4/1	93	10YR 5/6	7	С	Μ	SiCILo	Silty clay loam
<sup>1</sup> Type: C=C	Concentration, D=De	oletion, RN	/=Reduced Matrix, (	CS=Cove	red or Coat	ed Sand Gr	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Applic							licators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox	(S5)				2 cm Muck (A10)
	pipedon (A2)		Stripped Matri					
□ Black Histic (A3) □ Loamy Mucky Mineral (F1) (except MLRA 1)					Very Shallow Dark Surface (TF12)			
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)					Other (Explain in Remarks)			
Deplete	d Below Dark Surfac	e (A11)	Depleted Matr	ix (F3)				
Thick Da	ark Surface (A12)		× Redox Dark S	urface (F	6)		<sup>3</sup> In	dicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)					wetland hydrology must be present,			
Sandy C	Gleyed Matrix (S4)		Redox Depres	sions (F8	5)			unless disturbed or problematic.
	Layer (if present):							
Type: No								
Depth (ir	nches): <u>N/A</u>						Hydrid	: Soil Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	l criteria met thro	ough ind	icator F6.					
HYDROLC	OGY							
Wetland Hy	drology Indicators							
Primary Indi	icators (minimum of	one requir	ed; check all that ap	oly)				Secondary Indicators (2 or more required)
Surface	Water (A1)		Water-St	ained Lea	aves (B9) ( <b>e</b>	except MLR	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ater Table (A2)		1, 2, 4	4A, and 4	B)			4A, and 4B)
Saturati	on (A3)		Salt Crus	t (B11)				Drainage Patterns (B10)
🔲 Water M	larks (B1)		Aquatic II	nvertebra	tes (B13)			Dry-Season Water Table (C2)
	nt Deposits (B2)				Odor (C1)			Saturation Visible on Aerial Imagery (C9)
	posits (B3)				. ,	Living Roo		S Geomorphic Position (D2)
	at or Crust (B4)			•	ced Iron (C	Ū	• •	☐ Shallow Aquitard (D3)

Remarks:

Hydrology criteria met through secondary indicators C9 and D2 during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. However, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Monitoring Well (MP-16) location supports 3 consecutive weeks of high groundwater table during growing season.

Recent Iron Reduction in Tilled Soils (C6)

Stunted or Stressed Plants (D1) (LRR A)

Other (Explain in Remarks)

Depth (inches): 18 / None

Depth (inches): <u>18 / None</u>

Depth (inches): None

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

Iron Deposits (B5)

**Field Observations:** 

Surface Water Present?

(includes capillary fringe)

Water Table Present?

Saturation Present?

Surface Soil Cracks (B6)

Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

Yes 🗌 No 🗙

Yes 🛛 No 🗌

Yes 🛛 No 🗌

□ FAC-Neutral Test (D5)

Wetland Hydrology Present? Yes 🗵 No 🗌

Raised Ant Mounds (D6) (LRR A)

Frost-Heave Hummocks (D7)

Project/Site: 1244.001 - Puget Western	City/Cou	<sub>inty:</sub> Chehalis / Lev	vis	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State	<sub>e:</sub> WA	Sampling Point: MP-17
Investigator(s): Erin Harker, Ryan Krapp		Section, Township,	Range: <u>11, 13</u>	N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor	Local re	elief (concave, convex,	<sub>none):</sub> None	Slope (%): 0
Subregion (LRR): <u>A2</u>	Lat: 46.62517	'3 Long:	-122.905198	14 Datum: WGS 84
Soil Map Unit Name: Lacamas silt loam, 0 to	3 percent slopes		NWI classifica	ation: N/A
Are climatic / hydrologic conditions on the site typic				
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Cir	cumstances" pres	sent? Yes 🗶 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, expla	iin any answers ir	n Remarks.)
SUMMARY OF FINDINGS – Attach sit	e map showing sampl	ing point location	ns, transects,	, important features, etc.
	No 🗆	the Sampled Area ithin a Wetland?	Yes 🗌 N	lo 🗵
Remarks:		land and de Wadard T Varada		l II in stall stick and stad stars static and sta

IRS. Not all three wetland criteria met; only hydrophytic vegetation and hydric soils present. Data collected outside Wetland I. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-17) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3		·		Species Across All Strata: <u>3</u> (B)
4		·		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C	over	That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Symphyotrichum bracteolatum	30	Yes	FAC	Column Totals: (A) (B)
2. Hypochaeris radicata	20	Yes	FACU	
3. Alopecurus pratensis	20	Yes	FAC	Prevalence Index = B/A =
4. Anthoxanthum odoratum	10	No	FACU	Hydrophytic Vegetation Indicators:
5. Trifolium repens	5	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Ranunculus repens	3	No	FAC	☑ Dominance Test is >50%
7. Lotus corniculatus	2	No	FAC	□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				□ Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11		·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Mandu Mine Charter (District 20 ft)	90	= Total C	over	be present, unless disturbed or problematic.
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u> )				
1		·	·	Hydrophytic
2	0			Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum <u>10</u>	0	= Total C	over	
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est due to	a dominance of facultative species typical of
upland fields.	5			

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth Matrix Redox Features									
(inches) Color (moist) % Color (moist) % Type <sup>1</sup> Loc <sup>2</sup> Texture Remarks									
0 - 6 10YR 2/2 100 SiCILo Silty clay loam									
<u>6 - 13</u> <u>10YR 3/1</u> <u>95</u> <u>2.5YR 4/6</u> <u>5</u> <u>C</u> <u>M</u> <u>SiCILo</u> <u>Silty clay loam</u>									
13 - 18 7.5 YR 4/1 93 10YR 5/6 7 C M SiCILo Silty clay 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=Mat Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric So									
☐ Histosol (A1)									
☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Red Parent Material (TF2)									
□ Black Histic (A3) □ Loamy Mucky Mineral (F1) ( <b>except MLRA 1</b> ) □ Very Shallow Dark Surface (TF12)									
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2) ☐ Other (Explain in Remarks)									
Depleted Below Dark Surface (A11) Depleted Matrix (F3)									
Thick Dark Surface (A12) Redox Dark Surface (F6) <sup>3</sup> Indicators of hydrophytic vegetation and									
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present,									
Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       unless disturbed or problematic.									
Restrictive Layer (if present):									
Type: None									
Depth (inches): N/A Hydric Soil Present? Yes X No									
Remarks:									
Hydric soil criteria met through indicator F6.									
HYDROLOGY									
Wetland Hydrology Indicators:									
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required;	uired)								
Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLF	łA 1, 2,								
High Water Table (A2)         1, 2, 4A, and 4B)         4A, and 4B)									
Saturation (A3) Salt Crust (B11) Drainage Patterns (B10)									
Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2)									
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imag	ery (C9)								
□ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) □ Geomorphic Position (D2)	• • • •								
□ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3)									
□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5)									
□ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A)	)								
□ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7)	,								

Sparsely Vegetated Conca	ave Surfac	ce (B8)					
Field Observations:							
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None				
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): 30 / None				
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): 30 / None	_	Wetland Hydrology Present?	Yes 🗌	No 🗵
Describe Recorded Data (strea	am gauge	, monitori	ng well, aerial photos, previous	inspec	tions), if available:		
Monitoring Well (MP-17)	did not	have 2	consecutive weeks of hig	h grou	undwater table during grow	ing seas	on.

Remarks:

No wetland hydrology criteria was met during the June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. Hydrology monitoring indicates that this area is not saturated for long enough during the growing season to meet wetland hydrology criteria.

Project/Site: <u>1244.001 - Puget Western</u>	City/Count	<sub>ty:</sub> Chehalis / Lewis	ss	ampling Date: <u>3/6/19 &amp; 6/28/19</u>
Applicant/Owner: Puget Western		State:	WA s	ampling Point: MP-18
Investigator(s): Erin Harker, Ryan Krapp		Section, Township, Ra	<sub>inge:</sub> <u>11, 13 N,</u>	02 W
Landform (hillslope, terrace, etc.): Valley Floor	Local reli			Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u>				
Soil Map Unit Name: Lacamas silt loam, 0 to 3				
Are climatic / hydrologic conditions on the site typica				
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circu	mstances" presen	it? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain	any answers in R	emarks.)
SUMMARY OF FINDINGS – Attach site	map showing samplin	ng point locations	, transects, ir	nportant features, etc.
Hydrophytic Vegetation Present?Yes ∑Hydric Soil Present?Yes ∑Wetland Hydrology Present?Yes □	No 🗌 with No 🗵	he Sampled Area hin a Wetland?	Yes 🗌 No [	
Remarks:	tation and hydric soils present. Data collect	ted outside Wetland I. Vegetation	was mowed at initial wel	linetallation undated vegetation data

Not all three wetland criteria met; only hydrophytic vegetation and hydric soils present. Data collected outside Wetland J. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-18) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

Tree Objections (Distributed as 00.60)	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2				Total Number of Dominant
3		·		Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3.				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Alopecurus pratensis	30	Yes	FAC	Column Totals: (A) (B)
2. Holcus lanatus	20	Yes	FAC	
3. Agrostis capillaris	20	Yes	FAC	Prevalence Index = B/A =
4. Anthoxanthum odoratum	10	No	FACU	Hydrophytic Vegetation Indicators:
5. Hypochaeris radicata	10	No	FACU	Rapid Test for Hydrophytic Vegetation
6. Schedonorus arundinaceus	10	No	FAC	☑ Dominance Test is >50%
7				□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	Cover	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
% Bare Ground in Herb Stratum <u>0</u>	0	= Total C	Cover	Present? Yes 🗵 No 🗌
Remarks: Hydrophytic vegetation criteria met thr upland fields.	ough dorr	ninance t	est due to	a dominance of facultative species typical of

Profile Desc	cription: (Describ	e to the c	lepth ne	eded to docu	ment the	indicator	or confirm	the abs	ence of indicators.)
Depth	Matrix			Redo	x Feature	S			
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	
0 - 4	10YR 3/1	100			-			SiLo	Silt loam
4 - 10	10YR 3/1	98	7.5	YR 4/6	2	С	Μ	SiCILo	Silty clay loam
10 - 14	7.5 YR 4/1	98	7.5	YR 4/6	2	С	Μ	SiCILo	Silty clay loam
14 - 19	7.5 YR 4/1	95	10`	YR 6/6	5	С	М	CILo	Clay loam
1Turney 0-0				used Matrix Of	2-0				<sup>2</sup> I a satismu DI – Dana Liminar M-Matrix
	oncentration, D=D Indicators: (App						ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. icators for Problematic Hydric Soils <sup>3</sup> :
				Sandy Redox (S		oui)			2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix					Red Parent Material (TF2)
Black His				_oamy Mucky N	· /	I) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
Hydroge	n Sulfide (A4)		🗆 I	_oamy Gleyed I	Matrix (F2	)			Other (Explain in Remarks)
	d Below Dark Surfa	ce (A11)		Depleted Matrix	(F3)				
	ark Surface (A12)			Redox Dark Su	. ,				licators of hydrophytic vegetation and
-	lucky Mineral (S1)			Depleted Dark S		7)			wetland hydrology must be present,
-	Sandy Gleyed Matrix (S4)     Redox Depressions (F8)     unless disturbed or problematic.								
Restrictive Layer (if present): Type: None									
Double (inches), N/A									
Remarks: Hydric soil criteria met through indicators A11 and F6.									
Hydric soil	criteria met thi	ough in	dicator	s A11 and F	6.				
HYDROLO									
-	drology Indicator								
Primary India	cators (minimum o	f one requ	ired; che	eck all that appl	y)				Secondary Indicators (2 or more required)
Surface	Water (A1)			Water-Stai	ned Leave	es (B9) ( <b>e</b>	xcept MLR	XA [	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	iter Table (A2)			1, 2, 4/	A, and 4B	)			4A, and 4B)
Saturatio	on (A3)			Salt Crust				[	Drainage Patterns (B10)
Water M	arks (B1)			Aquatic Inv	/ertebrate	s (B13)		[	Dry-Season Water Table (C2)
Sedimen	nt Deposits (B2)			Hydrogen	Sulfide Oo	dor (C1)		[	Saturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Oxidized F	Rhizosphe	res along	Living Root	ts (C3) [	Geomorphic Position (D2)
Algal Ma	at or Crust (B4)			Presence of	of Reduce	d Iron (C4	-)	[	☐ Shallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iro	n Reductio	on in Tille	d Soils (C6)	) [	☐ FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) ( <b>LRR A</b> )	[	Raised Ant Mounds (D6) (LRR A)
	ava Visilala ava Asuis	Imagery	(B7)	Other (Exp	lain in Re	marks)		[	Frost-Heave Hummocks (D7)
	on Visible on Aeria								
	Vegetated Conca		e (B8)						
	Vegetated Conca		e (B8)		N I				
Sparsely	v Vegetated Conca		e (B8) No 🗙	Depth (inches					
Sparsely     Field Obser	vVegetated Conca vations: er Present?	ve Surfac	. ,	Depth (inches	<sub>s):</sub> <u>22 / N</u>	lone			
Sparsely Field Obser Surface Wat Water Table Saturation P	vegetated Conca vations: er Present? Present? resent?	ve Surfac	No 🗙		<sub>s):</sub> <u>22 / N</u>	lone	Wetla	and Hydr	ology Present? Yes 🗌 No 🗵
Sparsely Field Obser Surface Wat Water Table Saturation P (includes cap	v Vegetated Conca vations: er Present? Present?	ve Surface Yes □ Yes ⊠ Yes ⊠	No 🗵 No 🗌 No 🗌	Depth (inches Depth (inches	s): <u>22 / N</u> s): <u>22 / N</u>	lone lone		-	

Monitoring Well (MP-18) exhibited borderline hydrology during the growing season.

#### Remarks:

No wetland hydrology criteria was met during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. This plot had borderline hydrology during the monitoring period and was situated in a slightly higher topographic area, therefore this plot is excluded from the wetland boundary.

Project/Site: 1244.001 - Puget Western	City/County: Cheh	nalis / Lewis	Samplii	ng Date: <sup>3/6/19</sup> & 6/28/19
Applicant/Owner: Puget Western				ng Point: <u>MP-19</u>
Investigator(s): Erin Harker, Ryan Krapp	Section,	Township, Range: <u>11,</u>	13 N, 02 V	V
Landform (hillslope, terrace, etc.): Valley Floor		ve, convex, none): <u>Con</u>		
Subregion (LRR): <u>A2</u> Lat: <u>4</u>	6.623819	Long: <u>-122.905</u> 2	2455	Datum: WGS 84
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slop	es	NWI class	ification: <u>N</u> /	A
Are climatic / hydrologic conditions on the site typical for this time of y	rear? Yes 🗌 No 🗵	(If no, explain in Remar	ks.)	
Are Vegetation, Soil, or Hydrology significantly c	listurbed? Are '	"Normal Circumstances"	present? Y	es 🗶 No 🗌
Are Vegetation, Soil, or Hydrology naturally prob	lematic? (If ne	eded, explain any answe	rs in Remark	(s.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point	t locations, transed	cts, impor	tant features, etc.
Hydrophytic Vegetation Present?       Yes X       No □         Hydric Soil Present?       Yes X       No □         Wetland Hydrology Present?       Yes □       No X         Remarks:       No ×	Is the Sampl within a Wet		] No 🛛	

IrKs: Not all three wetland criteria met; only hydrophytic vegetation and hydric soils present. Data collected outside Wetland J. Vegetation was moved at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-19) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2				Total Number of Dominant
3		·		Species Across All Strata: <u>3</u> (B)
4	0	= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
Herb Stratum (Plot size: <u>10 ft</u> )	20	Vee		UPL species x 5 =
1. Schedonorus arundinaceus	30	Yes	FAC	Column Totals: (A) (B)
2. Ranunculus repens	30	Yes	FAC	
3. Alopecurus pratensis	20	Yes	FAC	Prevalence Index = B/A =
4. <u>Hypochaeris radicata</u>	10	No	FACU	Hydrophytic Vegetation Indicators:
5. Anthoxanthum odoratum	10	No	FACU	Rapid Test for Hydrophytic Vegetation
6		·		Dominance Test is >50%
7				Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30 ft)				be present, unless disturbed of problematic.
1				Hydrophytic
2	0			Vegetation
% Bare Ground in Herb Stratum _0	0	= Total Cover		Present? Yes 🗷 No 🗌
Remarks: Hydrophytic vegetation criteria met throupland fields.	ough dom	ninance t	est due to	a dominance of facultative species typical of

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth Matrix Redox Features											
(inches)	Color (moist)	%	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu		Remarks	
0 - 2	10YR 2/2	100	-		-			SiCIL	_0	Silty clay loam	
2 - 12	10YR 3/1	97	7.5	YR 4/6	3	С	М	SiCI	00	Silty clay loam	
12 - 20	7.5 YR 4/1	95	10Y	′R 6/6	5	С	Μ	CILo		Clay loam	
						·	-				
			·			·					
			·			· <u> </u>					
			·			·					
<sup>1</sup> Type <sup>.</sup> C=Co	oncentration, D=De	epletion R	M=Redi	uced Matrix CS	S=Covered	d or Coate	d Sand (	Grains	<sup>2</sup> 1 or	cation: PL=Pore Lining, M=Matrix.	
	ndicators: (Appl						u canu i			ors for Problematic Hydric Soils <sup>3</sup> :	
Histosol				Sandy Redox (S						n Muck (A10)	
	ipedon (A2)			Stripped Matrix (					Red Parent Material (TF2)		
Black His				oamy Mucky M	· ·	) (except	MLRA 1	) [		Shallow Dark Surface (TF12)	
Hydroger	n Sulfide (A4)			oamy Gleyed N	. ,	)		C	] Othe	er (Explain in Remarks)	
	Below Dark Surfa	ce (A11)		Depleted Matrix	. ,						
Thick Dark Surface (A12) Redox Dark Surface (F6)								3	<sup>3</sup> Indicators of hydrophytic vegetation and		
□ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7)									wetland hydrology must be present,		
-	leyed Matrix (S4) ayer (if present):			Redox Depressi	ons (F8)				unies	s disturbed or problematic.	
Type: No											
	ches): N/A							L la cale			
								Нуа	ric Soil	Present? Yes 🗵 No 🗌	
Remarks:											
Hydric soil	criteria met thr	ough ind	licator	s A11 and F	6.						
HYDROLO	GY										
Wetland Hvo	drology Indicators	3:									
-	ators (minimum of		red <sup>.</sup> che	eck all that apply	<i>v</i> )				Seco	ndary Indicators (2 or more required)	
Surface \		one requi		U Water-Stai		e (BQ) (e	cont MI	P۸	_	/ater-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,	
_	ter Table (A2)				, and 4B	. , .	Cept ML			4A, and 4B)	
Saturatio	. ,			Salt Crust (						rainage Patterns (B10)	
Water Ma	( )			Aquatic Inv	,	s (B13)			_	ry-Season Water Table (C2)	
	t Deposits (B2)			Hydrogen S		` '				aturation Visible on Aerial Imagery (C9)	
	osits (B3)			Oxidized R			iving Ro	oots (C3)	_	eomorphic Position (D2)	
	t or Crust (B4)			Presence c		-	-	000		hallow Aquitard (D3)	
	. ,					-		(6)		AC-Neutral Test (D5)	
Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)										aised Ant Mounds (D6) ( <b>LRR A</b> )	
	n Visible on Aerial	Imagery (	B7)	Other (Exp			/ (	,		rost-Heave Hummocks (D7)	
Sparsely Vegetated Concave Surface (B8)											
Field Obser	-		. ,								
Surface Wate	er Present?	Yes 🔲 🛛	No 🗙	Depth (inches	): None						
Water Table	Present?		No 🗌	Depth (inches							
Saturation P			No 🗌	Depth (inches			We	tland Hv	drolog	y Present? Yes 🗌 No 🗵	
(includes cap	oillary fringe)							-	_	,	
	corded Data (strea										
Monitoring	Well (MP-19) e	exhibited	borde	erline hydrolo	ogy duri	ng the g	rowing	seasor	า.		
Remarks:											
No wetland hydrology criteria was met during June 2019 delineation. A water table was observed in March 2019 during											

No wetland hydrology criteria was met during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. This plot had borderline hydrology during the monitoring period and was situated in a slightly higher topographic area, therefore this plot is excluded from the wetland boundary.

Project/Site: 1244.001 - Puget Wester	nCity/Co	ounty: Chehalis / Lewis	Samplin	g Date: <u>3/6/19 &amp; 6/28/19</u>
Applicant/Owner: Puget Western		State: W	/A Sampling	g Point: <u>MP-20</u>
Investigator(s): Erin Harker, Ryan Krap	р	Section, Township, Rang	<sub>je:</sub> <u>11, 13 N, 02 N</u>	/
Landform (hillslope, terrace, etc.): Valley F	·loorLocal	relief (concave, convex, none	-	_
Subregion (LRR): <u>A2</u>		14 Long: <u>-12</u> 2	2.90493130	Datum: WGS 84
Soil Map Unit Name: Lacamas silt loam	, 0 to 3 percent slopes	N'	WI classification: <u>N/A</u>	4
Are climatic / hydrologic conditions on the site				
Are Vegetation, Soil, or Hydrolo	ogy significantly disturbed	? Are "Normal Circums	stances" present? Ye	s 🗵 No 🗌
Are Vegetation, Soil, or Hydrold	ogy naturally problematic?	(If needed, explain an	y answers in Remarks	s.)
SUMMARY OF FINDINGS – Attac	h site map showing samր	ling point locations, t	ransects, import	ant features, etc.
Hydrophytic Vegetation Present? Y	es 🗙 No 🗌	le the Compled Area		
Hydric Soil Present? Y	es 🔀 No 🗌	Is the Sampled Area within a Wetland?	Yes 🗌 No 🕅	
Wetland Hydrology Present? Y	res 🗌 No 🗙			
Remarks: Not all three wetland criteria met; only hydrop	hytic vegetation and hydric soils present. Data c	ollected outside Wetland I. Vegetation wa	s mowed at initial well installat	ion, undated vegetation data

Not all three wetland criteria met; only hydrophytic vegetation and hydric soils present. Data collected outside Wetland J. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-20) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute			Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u>	(A)
2				Total Number of Dominant	
3					(B)
4				Demonstrat Demoissant Operation	
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					()
1				Prevalence Index worksheet:	
2				Total % Cover of:Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	_
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Holcus lanatus	40	Yes	FAC	Column Totals: (A)	
2. Alopecurus pratensis	30	Yes	FAC	()	_ (2)
3. Schedonorus arundinaceus	20	Yes	FAC	Prevalence Index = B/A =	
4. Agrostis capillaris	10	No	FAC	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide support data in Remarks or on a separate sheet)	
9				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology r	,
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
	0	= Total C	over	Present? Yes 🗙 No 🗌	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est due to	a dominance of facultative species typic	cal of

upland fields.

#### SOIL

Profile Desc	ription: (Describe	to the dep	oth needed to docu	ument the i	ndicator	or confirm	n the ab	sence of ind	licators.)	
Depth	Matrix		Red	ox Feature	<u>s</u>					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu		Remark	<u>(S</u>
0 - 3	10YR 3/1	100	-	-	. <u> </u>		SiCIL	.o Silty	clay loam	
3 - 8	7.5YR 4/1	98	5YR 4/6	2	С	PL	SiCIL	o Silty	<sup>,</sup> clay loam	
8 - 16	7.5YR 4/1	95	5YR 4/6	3	С	PL	SiCIL	.o Silty	r clay loam	
			10YR 6/6	2	С	PL				
16 - 18	10YR 5/1	95	10YR 6/6	5	С	PL	CILo	Clay	/ loam	
					·					
					· <u> </u>					
			. <u> </u>		·					
					·					
			Reduced Matrix, C			d Sand Gr			PL=Pore Lini	
		cable to all	LRRs, unless oth		ed.)				Problematic I	Hydric Soils':
Histosol	· /		Sandy Redox (				_	2 cm Muck	( )	
	ipedon (A2)		Stripped Matrix	· · /			L		t Material (TF2	/
Black His			Loamy Mucky			MLRA 1)		-	ow Dark Surfac	
	n Sulfide (A4)		Loamy Gleyed				L	] Other (Exp	lain in Remark	s)
	Below Dark Surfac	e (A11)	Depleted Matri				2.			
	rk Surface (A12)		Redox Dark Su	. ,	_`		3		ydrophytic veg	
-	ucky Mineral (S1)		Depleted Dark	•	()				drology must be	
	leyed Matrix (S4) Layer (if present):		Redox Depres	sions (F8)				uniess disti	Irbed or proble	matic.
Type: No	• • • •									
	<sub>ches):</sub> N/A									
	Siles). <u></u>						Hydr	ic Soil Prese	ent? Yes 🗵	No 🗌
Remarks:										
Hydric soil	criteria met thro	ugh indi	cators A11 and	F3.						
HYDROLO	CV									
	drology Indicators									
-				- I. <i>i</i> )				Coordonal	ndiaatana (O.a.	
		one require	ed; check all that app		(2.0) (					more required)
Surface \	· · /		U Water-Sta			ccept MLR	RA			(B9) ( <b>MLRA 1, 2</b> ,
-	ter Table (A2)			A, and 4B					and 4B)	
Saturatio	( )		Salt Crus	· /				_ 0	e Patterns (B10	,
Water Ma				vertebrates				-	son Water Tab	
Sedimen	t Deposits (B2)			Sulfide Od				Saturatio	on Visible on A	erial Imagery (C9)
Drift Dep	osits (B3)		Oxidized	Rhizospher	es along l	iving Root	ts (C3)	Geomor	phic Position (I	D2)
🗌 Algal Ma	t or Crust (B4)		Presence	of Reduce	d Iron (C4	)		Shallow	Aquitard (D3)	
Iron Dep	osits (B5)		Recent Ire	on Reductio	on in Tilleo	Soils (C6	)	FAC-Ne	utral Test (D5)	
Surface S	Soil Cracks (B6)		Stunted o	r Stressed	Plants (D <sup>-</sup>	) ( <b>LRR A</b> )		Raised /	Ant Mounds (D	6) ( <b>LRR A</b> )
Inundation	on Visible on Aerial	magery (B	7) 🗌 Other (Ex	plain in Rei	marks)			Frost-He	eave Hummock	(S (D7)
Sparsely	Vegetated Concave	e Surface (	B8)							
Field Obser	vations:									
Surface Wate	er Present?	/es 🗌 N	o 🔀 🛛 Depth (inche	es): None						
Water Table			o 🗌 🛛 Depth (inche							
Saturation P			o			Woth	and Hw		ent? Yes 🗌	No 🗵
(includes cap				55). <u></u>		vveu	anu nyo	urology Fres		
		n gauge, m	onitoring well, aeria	l photos, pr	evious ins	pections),	if availa	ıble:		
Monitoring	Well (MP-20) e	xhibited l	borderline hydro	logy duri	ng the g	rowing s	season	).		
Remarks:										
	. ,		met during Jur	ne 2019 d	delineat	ion. A w	ater ta	able was o	bserved in l	March 2019

				<u>.</u>				
Project/Site: 1244.001 - Puget West	ern		City/Co	unty: Cheh	ialis / Lev	VİS	Samplii	ng Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western					State	e: WA	Samplii	ng Point: <u>MP-21</u>
Investigator(s): Erin Harker, Ryan Kr	арр			Section,	Township,	Range: <u>11, 1</u>	3 N, 02 V	V
Landform (hillslope, terrace, etc.): Valley	Floor		Local					Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u>		Lat:	46.6223	69	Long:	-122.90494	4855	Datum: WGS 84
Soil Map Unit Name: Lacamas silt loa	m, 0 to 3 perc	ent slo	pes			NWI classif	ication: N/	A
Are climatic / hydrologic conditions on the	site typical for thi	s time of	year? Yes	No 🗵	(If no, exp	lain in Remark	s.)	
Are Vegetation, Soil, or Hydr	ology sig	nificantly	disturbed?	Are "	'Normal Cir	cumstances" p	resent? Y	es 🗶 No 🗌
Are Vegetation, Soil, or Hydr	ology natu	urally pro	blematic?	(If nee	eded, expla	in any answer	s in Remark	(s.)
SUMMARY OF FINDINGS – Atta	ach site map	showi	ng samp	ling point	location	ns, transect	ts, impor	tant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes  No  Yes  No  Yes  No  Xes		s the Sampl vithin a Wet		Yes 🗌	No 🗵		
Remarks:								

NaTKS: Not all three wetland hydrology criteria met. Data collected outside Wetland K. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-21) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u> )	% Cover	Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
	0	= Total C	Cover	That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				
1				Prevalence Index worksheet:
2		·		Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	Cover	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Hypochaeris radicata	40	Yes	FACU	Column Totals:         (A)         (B)
2. Anthoxanthum odoratum	20	Yes	FACU	
3. Holcus lanatus	20	Yes	FAC	Prevalence Index = B/A =
4 Lotus corniculatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Alopecurus pratensis	5	No	FAC	Rapid Test for Hydrophytic Vegetation
6 Schedonorus arundinaceus	5	No	FAC	Dominance Test is >50%
7		- <u> </u>		□ Prevalence Index is ≤3.0 <sup>1</sup>
				Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	Cover	be present, unless disturbed or problematic.
1		·		Hydrophytic
2	0			Vegetation
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes 🗌 No 🗷
Remarks:	Drovalar	and Index	v not wor	ranted due to combined lack of bydrie spile and
	rievaler	ice index	k not warr	ranted due to combined lack of hydric soils and
hydrology.				

# SOIL

Profile Desc	inpuon. (Describe		epuine	eaea to aocun	nent the	nuicator	or comm	n the abs	sence of indicators.)
Depth	Matrix				x Feature				
(inches)	Color (moist)	%	<u>Colo</u>	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	
0 - 6	10YR 3/1	100			-		-	SiCIL	Silty clay loam with roots
6 - 11	10YR 3/1	99		′R 3/6	1	<u>C</u>	M	SiCIL	
11 - 15	10YR 3/1	98	<u>10Y</u>	′R 4/6	2	С	Μ	CILo	Clay loam
15 - 17	7.5YR 4/1	95	10Y	′R 6/6	5	С	Μ	CILo	Clay loam
	oncentration, D=De						ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	ndicators: (Appli	cable to a				ed.)			dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (	· · ·			Sandy Redox (S				_	2 cm Muck (A10)
	ipedon (A2)			Stripped Matrix	· /	) (			
Black His	n Sulfide (A4)			.oamy Mucky M .oamy Gleyed N			MILRA 1)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	Below Dark Surfac	ο (Δ11)		Depleted Matrix		)			
-	rk Surface (A12)			Redox Dark Sur				<sup>3</sup> Ir	idicators of hydrophytic vegetation and
	ucky Mineral (S1)			Depleted Dark S	• • •	7)			wetland hydrology must be present,
	leyed Matrix (S4)			, Redox Depressi	•	,			unless disturbed or problematic.
	ayer (if present):								
Type: NO									
Depth (ind	ches): <u>N/A</u>							Hydri	c Soil Present? Yes 🗌 No 🗵
Remarks:									
No hydric s	oil criteria met.	Soil pr	ofile do	oes not mee	t for F6	for two	reasons:	: first, th	ne second layer (soil layer 6 - 11
		_ / • · • •	0/109	un ennenn. Ot	Scona, i	ne unira	layer (so	oli layei	r 11 - 15 inches) occurs too deep in
the soil pro	file, despite hav						layer (so	oli layei	r 11 - 15 inches) occurs too deep in
•	•						layer (so	oli layei	11 - 15 inches) occurs too deep in
HYDROLO	GY	ving end					layer (so		r 11 - 15 inches) occurs too deep in
HYDROLO Wetland Hyd	GY drology Indicators	ving end	bugh re	edox concen	trations		layer (so		· · · · ·
HYDROLO Wetland Hyd	GY drology Indicators ators (minimum of	ving end	ough re	edox concen	trations				Secondary Indicators (2 or more required)
HYDROLO Wetland Hyd Primary Indic	GY drology Indicators ators (minimum of Water (A1)	ving end	ough re	edox concen	trations y) ned Leave	es (B9) ( <b>e</b>			Secondary Indicators (2 or more required) U Water-Stained Leaves (B9) (MLRA 1, 2,
HYDROLO Wetland Hyd Primary Indic Surface V High Wat	GY drology Indicators eators (minimum of Water (A1) ter Table (A2)	ving end	red; che	edox concen	trations y) ned Leave <b>A, and 4B</b>	es (B9) ( <b>e</b>			Secondary Indicators (2 or more required) U Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLO Wetland Hyd Primary Indic Surface V High Wat Saturatio	GY drology Indicators eators (minimum of Water (A1) ter Table (A2) n (A3)	ving end	red; che	edox concen	(rations y) ned Leave A, and 4B (B11)	es (B9) ( <b>e</b> <b>)</b>			Secondary Indicators (2 or more required) U Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
HYDROLO Wetland Hyd Primary Indic Surface V High Wat Saturatio	<b>GY</b> trology Indicators ators (minimum of Vater (A1) ter Table (A2) n (A3) arks (B1)	ving end	red; che	edox concen	(B11) trations (a, and 4B (B11)	es (B9) ( <b>e</b> <b>)</b> s (B13)			Secondary Indicators (2 or more required) U Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
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HYDROLO Wetland Hyd Primary Indic Surface V High Wat Saturatio Water Ma Sedimen Drift Dep	GY drology Indicators eators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)	ving end	red; che	eck all that apply Water-Stain 1, 2, 4A Salt Crust ( Aquatic Inv Hydrogen S Oxidized R	(B11) ertebrate Sulfide Oc	es (B9) ( <b>e</b> <b>)</b> s (B13) dor (C1) res along	xcept MLF	RA	<ul> <li>Secondary Indicators (2 or more required)</li> <li>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> </ul>
HYDROLO Wetland Hyd Primary Indic Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat	GY drology Indicators eators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)	ving end	red; che	edox concen	trations y) ned Leave (B11) rertebrate Sulfide Oo hizosphei of Reduce	es (B9) ( <b>e</b> <b>)</b> dor (C1) res along d Iron (C4	xcept MLF	RA ts (C3)	<ul> <li>Secondary Indicators (2 or more required)</li> <li>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> </ul>
HYDROLO Wetland Hyd Primary Indic Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Ma' Iron Depo	GY brology Indicators bators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	ving end	red; che	edox concen	(B11) rertebrate Sulfide Oc hizospher of Reduce	es (B9) ( <b>e</b> <b>)</b> dor (C1) res along d Iron (C4 on in Tille	xcept MLF Living Roo !) d Soils (C6	RA tts (C3)	<ul> <li>Secondary Indicators (2 or more required)</li> <li>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> <li>Dry-Season Water Table (C2)</li> <li>Saturation Visible on Aerial Imagery (C9)</li> <li>Geomorphic Position (D2)</li> <li>Shallow Aquitard (D3)</li> <li>FAC-Neutral Test (D5)</li> </ul>
HYDROLO Wetland Hyc Primary Indic Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Depo Surface S	GY trology Indicators ators (minimum of Vater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	ving end	red; che	edox concen	(B11) rertebrate Sulfide Oc hizosphei f Reduce n Reductio Stressed	es (B9) ( <b>e</b> ) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	xcept MLF Living Roo !) d Soils (C6	RA tts (C3)	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)
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HYDROLO Wetland Hyd Primary Indic Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mar Iron Depd Surface S Inundatic Sparsely	GY drology Indicators eators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) m Visible on Aerial Vegetated Concav vations:	lmagery ( e Surface	B7) (B8)	edox concen	trations y) ned Leave A, and 4B (B11) rertebrate Sulfide Oc hizospher of Reduce n Reduction Stressed lain in Re	es (B9) ( <b>e</b> ) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	xcept MLF Living Roo !) d Soils (C6	RA tts (C3)	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)
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HYDROLO Wetland Hyc Primary Indic Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Depo Surface S Inundatic Sparsely Field Obsert	GY trology Indicators ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present?	lmagery ( e Surface Yes □ Yes ⊠	B7) (B8) No 🗶	edox concen	y) ned Leave (B11) rertebrate Sulfide Oc hizospher of Reduce n Reduction Stressed lain in Re	es (B9) ( <b>e</b> ) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks) None	xcept MLF	RA (C3)	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)
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Project/Site: 1244.001 - Puget Western City/Cour	nty: Chehalis / Lewis	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western	-	Sampling Point: MP-22
Investigator(s): Erin Harker, Ryan Krapp	_ Section, Township, Range:	11, 13 N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor Local re	lief (concave, convex, none):	Concave Slope (%): 0
Subregion (LRR): <u>A2</u> Lat: <u>46.622004</u>	4 Long: -122	.90526826 Datum: WGS84
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NW	I classification: PEMA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes [		
Are Vegetation, Soil, or Hydrology significantly disturbed?	Are "Normal Circumsta	nces" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any	answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampli	ng point locations, tra	insects, important features, etc.
Hydric Soil Present? Yes 🛛 No 🗌	the Sampled Area thin a Wetland?	Yes 🗵 No 🗌

All three wetland criteria met. Data collected in Wetland K. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-22) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A	4)
2				Total Number of Dominant	
3				Species Across All Strata: <u>2</u> (B	5)
4					/
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A	/B)
Sapling/Shrub Stratum (Plot size: 30 ft)				That Ale OBE, TAGW, 01 TAC. 100 70 (A	<i>и</i> в)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
·	0	= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )		rotar o	0001	UPL species x 5 =	
1. Phalaris arundinacea	50	Yes	FACW	Column Totals: (A)	(B)
2. Juncus effuses	25	Yes	FACW		(8)
3. Lotus corniculatus	15	No	FAC	Prevalence Index = B/A =	
4. Holcus lanatus	10	No	FAC	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is $\leq 3.0^1$	
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	g
9				Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
11		·		<sup>1</sup> Indicators of hydric soil and wetland hydrology mus	st
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.	31
1				Under when the	
2				Hydrophytic Vegetation	
_	0	= Total C	over	Present? Yes X No	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance to	est.		

Profile Desc	ription: (Describ	e to the de	pth needed to docu	ment the i	indicator	or confirm	n the absence	e of indicators.)
Depth	Matrix		Redo	ox Feature	<u>s</u>			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 3	10YR 2/2	100	-	-	-	-	SiLo	Silt loam with organics/roots
3 - 8	7.5YR 4/1	98	7.5YR 4/6	2	С	Μ	CILo	Clay loam
8 - 18	7.5YR 4/1	95	10YR 6/6	5	С	М	CILo	Clay loam
						<u> </u>		·
<sup>1</sup> Type C=Co	oncentration D=De	epletion RN	/-Reduced Matrix, C	S=Covered	d or Coate	ed Sand G	rains <sup>2</sup> l c	ocation: PL=Pore Lining, M=Matrix.
			II LRRs, unless othe					ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (	S5)			🗌 2 cr	m Muck (A10)
	ipedon (A2)		Stripped Matrix	-				d Parent Material (TF2)
Black His			Loamy Mucky M	. ,	) (except	MLRA 1)		y Shallow Dark Surface (TF12)
Hydroge	n Sulfide (A4)		Loamy Gleyed	Matrix (F2	)		🗌 Oth	er (Explain in Remarks)
•	Below Dark Surfa	ce (A11)	<ul> <li>Depleted Matrix</li> </ul>	(F3)				
	rk Surface (A12)		Redox Dark Su	, ,				ors of hydrophytic vegetation and
	ucky Mineral (S1)		Depleted Dark	•	7)			and hydrology must be present,
	leyed Matrix (S4)		Redox Depress	ions (F8)			unle	ss disturbed or problematic.
Type: No	Layer (if present):							
· ·	<sub>ches):</sub> N/A							
	snes).						Hydric Soi	il Present? Yes 🗵 No 🗌
Remarks:								
Hydric soil	criteria met thr	ough ind	icators A11 and F	3.				
HYDROLO	GY							
	drology Indicators							
-	••		ad, abaak all that ann	6.0			Saar	ander (Indiactors (2 or more required)
		one requir	ed; check all that app		(50) (			ondary Indicators (2 or more required)
Surface \			☐ Water-Sta			xcept MLF	RA LIV	Vater-Stained Leaves (B9) (MLRA 1, 2,
-	ter Table (A2)			A, and 4B	)			4A, and 4B)
Saturatio	. ,		Salt Crust	· /	(540)			Drainage Patterns (B10)
Water Ma	. ,		Aquatic In		. ,			Dry-Season Water Table (C2)
	t Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
	osits (B3)		Oxidized F		-	-	· · ·	Geomorphic Position (D2)
-	t or Crust (B4)		Presence					Shallow Aquitard (D3)
	osits (B5)		Recent Iro					AC-Neutral Test (D5)
	Soil Cracks (B6)		Stunted or		-	1) ( <b>LRR A</b>		Raised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aerial			olain in Re	marks)		L F	rost-Heave Hummocks (D7)
	Vegetated Concav	ve Surface	(B8)					
Field Observ	vations:			Nama				
Surface Wate	er Present?	Yes 🗌 🛛 N	lo 🗙 Depth (inche					
Water Table	Present?	Yes 🗙 🛛	lo 🗌 Depth (inche					
Saturation P		Yes 🗶 🛛 N	lo 🗌 Depth (inche	s): <u>8 / No</u>	one	Wet	and Hydrolog	gy Present? Yes 🗵 No 🗌
(includes cap		m douido	ponitoring well porial	nhotoo r		nontions)	if available:	
			nonitoring well, aerial					his during growing access
		ocation s	supports 3 consec	uuve we	EEKS OF I	ngn grol	unuwater ta	ble during growing season.
Remarks:				·	o		1 00 10	
Hydrology	criteria met thr	ouah prii	marv indicators A	2 and A	3 durind	the Ma	rch 2019 w	ell install, and secondary

indicators D2 and D5 during June 2019 delineation. Additionally, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	City/County	Chehalis / Lewis	S Sam	npling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State:	WA Sam	pling Point: MP-23
Investigator(s): Erin Harker, Ryan Krapp		Section, Township, Ra	ange: <u>11, 13 N, 0</u>	2 W
Landform (hillslope, terrace, etc.): Valley Floor			-	Slope (%): <u>1</u>
Subregion (LRR): <u>A2</u>	Lat: 46.621536	Long:	-122.90412435	Datum: WGS84
Soil Map Unit Name: Lacamas silt loam, 0 to 3	3 percent slopes		NWI classification:	PEMA
Are climatic / hydrologic conditions on the site typica	I for this time of year? Yes 🗌			
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circu	mstances" present?	Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain	any answers in Rem	narks.)
SUMMARY OF FINDINGS – Attach site	map showing sampling	point locations	, transects, imp	oortant features, etc.
Hydrophytic Vegetation Present?       Yes ⊠         Hydric Soil Present?       Yes ⊠         Wetland Hydrology Present?       Yes ⊠	No	Sampled Area	Yes 🗵 No 🗌	

Remarks: All three wetland criteria met. Data collected in Wetland L. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-23) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: $2$ (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species         x 1 =
3				
4		·		FACW species x 2 =
5		·		FAC species x 3 =
Herb Stratum (Plot size: 10 ft)	0	= Total C	over	FACU species x 4 =
1 Juncus effusus	40	Yes	FACW	UPL species x 5 = (D)
2. Hypochaeris radicata	20	Yes	FACU	Column Totals: (A) (B)
3. Lotus corniculatus	20	Yes	FAC	Prevalence Index = B/A =
Anthoxanthum odoratum	18	No	FACU	Hydrophytic Vegetation Indicators:
5. Rumex acetosella	2	No	FACU	Rapid Test for Hydrophytic Vegetation
				Apple restrict reprint regetation     IN Dominance Test is >50%
6				$\square \text{ Prevalence Index is } \leq 3.0^{1}$
7				☐ Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				☐ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.
1		·		Hydrophytic
2	0	= Total C	over	Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum <u>0</u>	<u> </u>		over	
Remarks:	rough don	ninance t	ost Vare	etation data collected during June 2019
investigation.	li ougri uon		ssi. vege	ation data collected during Julie 2019

Profile Description: (Describe to the de	pth needed to doc	ument the	e indicator	or confirm	n the abs	ence of indicators.)			
Depth <u>Matrix</u>		lox Featu							
(inches) Color (moist) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture				
<u>0-8</u> <u>10YR 3/1</u> <u>98</u>	10YR 4/4	2	C	Μ	SiCILo	Silty clay loam; roots to 6 inches			
<u>8 - 13</u> <u>10YR 3/1</u> <u>97</u>	10YR 4/4	3	С	Μ	SiCILo	Silty clay loam			
<u>13 - 17</u> 7.5YR 4/1 95	10YR 6/6	5	С	Μ	CILo	Clay loam			
· · ·									
<sup>1</sup> Type: C=Concentration, D=Depletion, RI				ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators: (Applicable to a			oted.)			licators for Problematic Hydric Soils <sup>3</sup> :			
Histosol (A1)	Sandy Redox					2 cm Muck (A10) Red Derent Meterial (TE2)			
<ul> <li>Histic Epipedon (A2)</li> <li>Black Histic (A3)</li> </ul>	Stripped Matri Loamy Mucky	. ,				Red Parent Material (TF2) Very Shallow Dark Surface (TF12)			
Hydrogen Sulfide (A4)	Loamy Gleyed					Other (Explain in Remarks)			
Depleted Below Dark Surface (A11)	Depleted Matr		<i>_</i> )						
☐ Thick Dark Surface (A12)	Redox Dark S	( )	6)		<sup>3</sup> In	dicators of hydrophytic vegetation and			
Sandy Mucky Mineral (S1)	Depleted Dark	•	,			wetland hydrology must be present,			
Sandy Gleyed Matrix (S4)	Redox Depres					unless disturbed or problematic.			
Restrictive Layer (if present):	-								
Type: None									
Depth (inches): <u>N/A</u>					Hydric	Hydric Soil Present? Yes 🗵 No 🗌			
Remarks:					-				
Hydric soil criteria met through ind	icator F6								
nyano con entena met anough ma									
HYDROLOGY									
Wetland Hydrology Indicators:									
Primary Indicators (minimum of one requir	·		(==) (			Secondary Indicators (2 or more required)			
Surface Water (A1)	☐ Water-St			xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,			
➢ High Water Table (A2)		4A, and 4	в)		4A, and 4B)				
Saturation (A3)	Salt Crus				Drainage Patterns (B10)				
Water Marks (B1)	Aquatic I		. ,		Dry-Season Water Table (C2)				
Sediment Deposits (B2)			Odor (C1)	–		Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3)			eres along	-	ots (C3)	Seomorphic Position (D2)			
Algal Mat or Crust (B4)			ced Iron (C4	,		Shallow Aquitard (D3)			
Iron Deposits (B5)	Recent Ir	on Reduc	6) FAC-Neutral Test (D5)						
Surface Soil Cracks (B6)	Raised Ant Mounds (D6) (LRR A)								
Inundation Visible on Aerial Imagery (I	, .	kplain in F	Remarks)		ļ	Frost-Heave Hummocks (D7)			
Sparsely Vegetated Concave Surface	(B8)								

Field Observations:							
Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None				
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): <u>11 / None</u>				
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): <u>11 / None</u>	Wetland Hydrology Present? Yes 🗵	No 🗌		
Describe Recorded Data (str	eam gauge	, monitori	ng well, aerial photos, previous inspec	tions), if available:			
Monitoring Well (MP-23) location supports 3 consecutive weeks of high groundwater table during growing season.							
Remarks:							
Hydrology criteria met through primary indicators A2 and A3 during the March 2019 well install, and secondary indicato							

Hydrology criteria met through primary indicators A2 and A3 during the March 2019 well install, and secondary indicators C9 and D2 during June 2019 delineation. Additionally, hydrology monitoring indicates that this area supports high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	City/Cou	<sub>inty:</sub> Chehalis / Lewis	5	Sampling Date: 3/6/19 & 6/28/19			
Applicant/Owner: Puget Western		State:	WA	Sampling Point: MP-24			
Investigator(s): Erin Harker, Ryan Krapp		Section, Township, Ra	ange: <u>11, 13 N</u>	N, 02 W			
Landform (hillslope, terrace, etc.): Valley Floor	Local re			e Slope (%): <u>1</u>			
				33 Datum: WGS 84			
Soil Map Unit Name: Lacamas silt loam, 0 to	3 percent slopes		NWI classificat	ion: N/A			
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 Circu	mstances" prese	ent? 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	No 🗵	the Sampled Area					
Hydric Soil Present? Yes 🗙	No 🗖	ithin a Wetland?	Yes 🗌 No				
Wetland Hydrology Present? Yes							
Remarks: Not all three wetland criteria met; only hydric soil preser	nt. Data collected upslope of Wetland P.	Vegetation was mowed at initial we	ll installation, updated	vegetation data collected during June site			

Not all three wetland criteria met; only hydric soil present. Data collected upslope of Wetland P. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-24) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1		·		That Are OBL, FACW, or FAC: $0$ (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
Carling/Charle Charlenne (Distring 20 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				
3				OBL species x 1 =
4		·	·	FACW species x 2 =
5		·		FAC species x 3 =
Herb Stratum (Plot size: 10 ft)	0	= Total C	over	FACU species x 4 =
1 Taraxacum officinale	50	Yes	FACU	UPL species x 5 =
2. Juncus effusus	10	No	FACW	Column Totals: (A) (B)
3. Schedonorus pratensis	10	No	FACU	Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
4				Rapid Test for Hydrophytic Vegetation
5				Dominance Test is >50%
6				$\square Prevalence Index is < 3.0^{1}$
7				☐ Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants <sup>1</sup>
10		·		☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	70	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30 ft</u> )	70	= Total C	over	be present, unless disturbed or problematic.
1		·		Hydrophytic
2	0	= Total C		Vegetation Present? Yes □ No ⊠
% Bare Ground in Herb Stratum <u>30</u>	<u> </u>		over	
Remarks:	Dravel	مم العجاد		
	Prevaler	ice index	not warr	anted due to combined lack of hydric soil and
hydrology.				

Profile Desc	ription: (Describ	e to the de	pth need	ed to docur	nent the	indicator	or confirm	n the at	osence	of indicators.)	
Depth	 Matrix				x Feature					,	
(inches)	Color (moist)	%	Color (n		<u>%</u>		Loc <sup>2</sup>	Textu	re	Remarks	
0 - 8	10YR 2/1	99	5YR 4	1/6	1	С	Μ	SiCIL	0	Silty clay loam; roots present	
8 - 13	10YR 2/1	98	5YR 4	1/6	2	С	Μ	SiCIL	.0	Silty clay loam	
13 - 17	7.5YR 4/1	95	10YR	6/6	5	С	Μ	CILo		Clay loam	
							<u> </u>				
	oncentration, D=De						ed Sand G			cation: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (Appl	icable to a	ll LRRs, ι	inless othe	rwise not	ed.)		I	ndicato	ors for Problematic Hydric Soils <sup>3</sup> :	
Histosol	· /			dy Redox (S	-					Muck (A10)	
	ipedon (A2)			oped Matrix	. ,			L		Parent Material (TF2)	
Black His	n Sulfide (A4)			my Mucky M			MLRA 1)		-	r Shallow Dark Surface (TF12) er (Explain in Remarks)	
	Below Dark Surfa	ce (A11)		my Gleyed I leted Matrix	-	)		L			
	rk Surface (A12)			lox Dark Su				3	ndicato	ors of hydrophytic vegetation and	
	ucky Mineral (S1)			leted Dark S		7)				nd hydrology must be present,	
-	leyed Matrix (S4)		•	lox Depress	•	,		unless disturbed or problematic.			
	Layer (if present):										
Type: NC											
Depth (in	<sub>ches):</sub> N/A							Hydı	ric Soil	Present? Yes 🗵 No 🗌	
Remarks:											
Hydric soil	criteria met thr	ough ind	cators A	12 and F	6.						
		0									
HYDROLO	GY										
	drology Indicators	5:									
-	cators (minimum of		ed; check	all that appl	y)				Seco	ndary Indicators (2 or more required)	
Surface				Water-Stai		es (B9) ( <b>e</b>	xcept ML	RA		ater-Stained Leaves (B9) (MLRA 1, 2,	
	ter Table (A2)		_		A, and 4B					4A, and 4B)	
☐ Saturatio	. ,			Salt Crust		,			Пр	rainage Patterns (B10)	
U Water M				Aquatic Inv		s (B13)		Dry-Season Water Table (C2)			
	t Deposits (B2)			Hydrogen		· · /				aturation Visible on Aerial Imagery (C9)	
						• •	Livina Roc	ots (C3)		eomorphic Position (D2)	
							Shallow Aquitard (D3)				
	Soil Cracks (B6)			Stunted or			``	,		aised Ant Mounds (D6) ( <b>LRR A</b> )	
	on Visible on Aerial	Imagery (E	37) 🗌	Other (Exp		-		,		ost-Heave Hummocks (D7)	
	Vegetated Conca		,			,			_		
Field Obser			( )								
Surface Wat	er Present?	Yes 🗌 🛛 🛛	lo 🗙 D	epth (inches	<sub>s):</sub> None						
Water Table	Present?			epth (inches							
Saturation Present? Yes No Depth (inches): <u>13 / None</u> Wetland Hydrology Present? Yes No X											
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											

Monitoring Well (MP-24) exhibited borderline hydrology during the growing season.

Remarks:

No wetland hydrology criteria was met during June 2019 delineation. A water table was observed in March 2019 during well install, but was too deep (>12") to meet primary indicator A2. This plot had borderline hydrology, therefore is excluded from the wetland boundary.

Project/Site: 1244.001 - Puget Western	City/County:	Chehalis / Lewis	Samplin	g Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State: WA	Samplir	ig Point: MP-25
Investigator(s): Erin Harker, Ryan Krapp	s	Section, Township, Range:	11, 13 N, 02 V	V
Landform (hillslope, terrace, etc.): Valley Floor	Local relief	(concave, convex, none):	Concave	Slope (%): 0
Subregion (LRR): A2				
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent	t slopes	NWI d	assification: PE	MA
Are climatic / hydrologic conditions on the site typical for this tin	me of year? Yes 🗌			
Are Vegetation, Soil, or Hydrology signific	cantly disturbed?	Are "Normal Circumstand	ces" present? Ye	es 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturall	ly problematic?	(If needed, explain any ar	nswers in Remark	s.)
SUMMARY OF FINDINGS – Attach site map she	owing sampling	point locations, tran	sects, impor	tant features, etc.
Hydrophytic Vegetation Present?       Yes ⊠ No □         Hydric Soil Present?       Yes ⊠ No □         Wetland Hydrology Present?       Yes ⊠ No □		Sampled Area	es 🗙 No 🗌	
Remarks:				

Remarks: All three wetland criteria met. Data collected in Wetland R. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-25) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u> )	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 2	(A)
2					
3.				Total Number of Dominant Species Across All Strata: 2	(B)
					(D)
4				Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
				Prevalence Index worksheet:	
1					
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	_
5				FAC species x 3 =	_
	0	= Total C	over	FACU species x 4 =	_
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Agrostis capillaris	35	Yes	FAC	Column Totals: (A)	
2. Holcus lanatus	25	Yes	FAC		_ (=)
3. Schedonorus arundinaceus	15	No	FAC	Prevalence Index = B/A =	
4. Juncus effusus	10	No	FACW	Hydrophytic Vegetation Indicators:	
5. Anthoxanthum odoratum	5	No	FACU	□ Rapid Test for Hydrophytic Vegetation	
6. Lotus corniculatus	5	No	FAC	☑ Dominance Test is >50%	
7. Carex sp.*	5	No	FACW	□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide support	
9				data in Remarks or on a separate sheet)	
10				☐ Wetland Non-Vascular Plants <sup>1</sup>	
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11	100	= Total C		<sup>1</sup> Indicators of hydric soil and wetland hydrology r	nust
Woody Vine Stratum (Plot size: 30 ft)			over	be present, unless disturbed or problematic.	
1					
				Hydrophytic	
2	0			Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum 0	0	= Total C	over		
Remarks:	ب بابر المربية			tation data callected during here. 2010	
Hydrophytic vegetation criteria met thr	ougn dom	iinance te	est. Vege	tation data collected during June 2019	

investigation. \*Carex species assumed FACW for scoring purposes.

Profile Des	cription: (Describe	to the dep	th needed to doc	ument the	indicator	or confirm	n the ab	sence of indicators.)		
Depth	Matrix			dox Featur		. 2	<b>-</b> .			
<u>(inches)</u> 0 - 9	<u>Color (moist)</u> 10YR 3/1	<u>%</u> 99	<u>Color (moist)</u> 5YR 3/4	<u>%</u> 2	<u>Type<sup>1</sup></u> C	Loc <sup>2</sup>	<u>Textur</u> SiCIL			
							-			
9 - 14	10YR 3/1	90	5YR 3/4	10	С	Μ	SiCIL			
14 - 18	7.5YR 4/1	95	10YR 6/6	5	С	Μ	SiCIL	o Silty clay loam		
	oncentration, D=Dep					ed Sand G	rains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
Hydric Soil	Indicators: (Application)	able to all	LRRs, unless oth	nerwise no	oted.)		In	ndicators for Problematic Hydric Soils <sup>3</sup> :		
Histosol			Sandy Redox					2 cm Muck (A10)		
	pipedon (A2)		Stripped Matr	· · /				- ( )		
Black Hi			Loamy Mucky			MLRA 1)	_	] Very Shallow Dark Surface (TF12)		
							] Other (Explain in Remarks)			
	<ul> <li>Depleted Below Dark Surface (A11)</li> <li>Depleted Matrix (F3)</li> <li>Thick Dark Surface (A12)</li> <li>Redox Dark Surface (F6)</li> </ul>						31	<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy Mucky Mineral (S1)							wetland hydrology must be present,			
	Gleyed Matrix (S4)		Redox Depres		, ,			unless disturbed or problematic.		
	Layer (if present):									
Type: No										
Depth (in	ches): <u>N/A</u>						Hydr	Hydric Soil Present? Yes 🗵 No 🗌		
Remarks:										
Hvdric soil	criteria met throu	uah indic	ator F6.							
HYDROLO	GY									
Wetland Hy	drology Indicators:									
Primary Indi	cators (minimum of o	ne required	l; check all that ap	oply)				Secondary Indicators (2 or more required)		
Surface	Water (A1)		☐ Water-S	tained Lea	ves (B9) ( <b>e</b>	xcept ML	RA	Water-Stained Leaves (B9) (MLRA 1, 2,		
🗙 High Wa	ater Table (A2)		1, 2,	4A, and 4	B)		4A, and 4B)			
🗙 Saturatio	on (A3)		Salt Crus	st (B11)				Drainage Patterns (B10)		
Water M	larks (B1)		Aquatic I	nvertebrat	es (B13)			Dry-Season Water Table (C2)		
Sedimer	nt Deposits (B2)			n Sulfide C				Saturation Visible on Aerial Imagery (C9)		
Drift Dep	oosits (B3)		Oxidized	Rhizosph	eres along	Living Roo	ots (C3)	Seomorphic Position (D2)		
	at or Crust (B4)				ed Iron (C4			☐ Shallow Aquitard (D3)		
-	oosits (B5)				tion in Tille	``	,	▼ FAC-Neutral Test (D5)		
	Soil Cracks (B6)				d Plants (D	1) ( <b>LRR A</b>	.)	Raised Ant Mounds (D6) (LRR A)		
	on Visible on Aerial Ir			xplain in R	emarks)			Frost-Heave Hummocks (D7)		
,	/ Vegetated Concave	Surface (E	38)							
Field Obser		1	- /							

Surface Water Present?	Yes 🗌	No 🗙	Depth (inches): None				
Water Table Present?	Yes 🗙	No 🗌	Depth (inches): <u>9 / None</u>				
Saturation Present? (includes capillary fringe)	Yes 🗙	No 🗌	Depth (inches): 9 / None	Wetland Hydrology Present? Yes 🗵 No 🗌			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Monitoring Well (MP-25) location supports 3 consecutive weeks of high groundwater table during growing season.							
Remarks:							
Hydrology criteria met through primary indicators A2 and A3 during the March 2019 well install, and through secondary indicators D2 and D5 during June 2019 delineation. Additionally, hydrology monitoring indicates that this area supports							

high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	City/County:	Chehalis / Lewis	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State: WA	A Sampling Point: MP-26
Investigator(s): Erin Harker, Ryan Krapp	S	Section, Township, Range	<u>. 11, 13 N, 02 W</u>
Landform (hillslope, terrace, etc.): Valley Floor			Concave Slope (%): 0
Subregion (LRR): <u>A2</u>			2.90112663 Datum: WGS 84
Soil Map Unit Name: Lacamas silt loam, 0 to 3	percent slopes	NW	/I classification: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical f	for this time of year? Yes 🗌	No 🗵 (If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumsta	ances" present? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any	answers in Remarks.)
SUMMARY OF FINDINGS – Attach site n	map showing sampling	point locations, tra	ansects, important features, etc.
Hydrophytic Vegetation Present?Yes XHydric Soil Present?Yes XWetland Hydrology Present?Yes X	No within	Sampled Area n a Wetland?	Yes 🗵 No 🗌
Remarks:			

Remarks: All three wetland criteria met. Data collected in Wetland R. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-26) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4		·		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Ranunculus repens	25	Yes	FAC	Column Totals: (A) (B)
2. Holcus lanatus	20	Yes	FAC	
3. Juncus effusus	20	Yes	FACW	Prevalence Index = B/A =
4. Lotus corniculatus	10	No	FAC	Hydrophytic Vegetation Indicators:
5. Dactylis glomerata	10	No	FACU	Rapid Test for Hydrophytic Vegetation
6. Anthoxanthum odoratum	5	No	FACU	☑ Dominance Test is >50%
7. Alopecurus pratensis	5	No	FAC	□ Prevalence Index is ≤3.0 <sup>1</sup>
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				↓ Wetland Non-Vascular Plants <sup>1</sup>
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	05	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	95	= Total C	over	be present, unless disturbed or problematic.
; (,				
1				Hydrophytic
2	0	= Total C		Vegetation Present? Yes ⊠ No □
% Bare Ground in Herb Stratum 5	<u> </u>	- Total C	over	
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance te	est. Veae	tation data collected during June 2019
investigation.	5		0-	<b>0</b>

#### SOIL

	o uno aopi	th needed to docum		uicator	or contirm	n the ab	sence of	r indicators.)
Depth <u>Matrix</u>		Redox	Features					
(inches) Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur		Remarks
0 - 4 10YR 3/1	100	-	-	-	-	SiCIL	<u>o </u>	Silty clay loam
4 - 11 7.5YR 3/1	97	5YR 4/6	3	С	М	SiLo		Silt loam
11 - 17 5YR 4/1	95	5YR 4/6	5	С	Μ	CILo	(	Clay loam
	<u> </u>		·		<u> </u>			
	·			<u> </u>	·			
	<u> </u>							
<sup>1</sup> Type: C=Concentration, D=Deple					d Sand Gr			tion: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applical	ble to all I	LRRs, unless other	wise note	d.)		In	dicators	for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)		Sandy Redox (S	5)				] 2 cm N	/luck (A10)
Histic Epipedon (A2)		Stripped Matrix (	S6)				] Red Pa	arent Material (TF2)
Black Histic (A3)		Loamy Mucky Mi	ineral (F1)	(except	MLRA 1)			hallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed M	latrix (F2)				] Other (	(Explain in Remarks)
X Depleted Below Dark Surface (	(A11)	Depleted Matrix (	(F3)					
Thick Dark Surface (A12)		Redox Dark Surf	ace (F6)			<sup>3</sup> Ir	ndicators	of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark Set	urface (F7	)			wetland	l hydrology must be present,
Sandy Gleyed Matrix (S4)		Redox Depression	ons (F8)				unless o	disturbed or problematic.
Restrictive Layer (if present):								
Type: None								
Depth (inches): <u>N/A</u>						Hydri	ic Soil P	resent? Yes 🗵 No 🗌
Remarks:								
Hydric soil criteria met throug	ah indic:	ators A11 and FA	3					
Tryane son entena met triod	grimaica		<i>.</i>					
HYDROLOGY								
HYDROLOGY Wetland Hydrology Indicators:								
	e required	; check all that apply	·)				Seconda	ary Indicators (2 or more required)
Wetland Hydrology Indicators:	e required	; check all that apply □ Water-Stain		s (B9) ( <b>e</b> :	ccept MLR			ary Indicators (2 or more required) er-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,
Wetland Hydrology Indicators: Primary Indicators (minimum of one	e required	🗌 Water-Stain		s (B9) ( <b>e</b> :	cept MLR		□ Wat	· · · · · ·
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)	e required	🗌 Water-Stain	ed Leave , <b>and 4B)</b>	s (B9) ( <b>e</b> :	ccept MLF		U Wat	er-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         High Water Table (A2)         Saturation (A3)	e required	☐ Water-Stain <b>1, 2, 4A</b> ☐ Salt Crust (I	ed Leaves , <b>and 4B)</b> B11)		ccept MLF	RA	Wate 2 Drai	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> 4 <b>A, and 4B)</b> nage Patterns (B10)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)	e required	<ul> <li>☐ Water-Stain</li> <li>1, 2, 4A</li> <li>☐ Salt Crust (I</li> <li>☐ Aquatic Investion</li> </ul>	ed Leaves , <b>and 4B)</b> B11) ertebrates	(B13)	ccept MLR		Wate Z Drai	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> nage Patterns (B10) Season Water Table (C2)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)	e required	<ul> <li>☐ Water-Stain</li> <li>1, 2, 4A</li> <li>☐ Salt Crust (I</li> <li>☐ Aquatic Inve</li> <li>☐ Hydrogen S</li> </ul>	ed Leaves , <b>and 4B)</b> B11) ertebrates sulfide Odd	(B13) or (C1)	-		U Wate Drai	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)	e required	Water-Stain <b>1, 2, 4A</b> Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh	ned Leaves , <b>and 4B)</b> B11) ertebrates Gulfide Odo nizosphere	(B13) or (C1) es along	iving Roo		☐ Wate 2 ☐ Drai ☐ Dry- ☐ Satu ※ Geo	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)	e required	Water-Stain 1, 2, 4A Salt Crust (f Aquatic Inve Hydrogen S Oxidized Rh Presence of	ed Leaves , <b>and 4B)</b> B11) ertebrates Sulfide Odo nizosphere f Reduced	(B13) or (C1) es along Iron (C4	_iving Roo	ts (C3)	<ul> <li>Wate</li> <li>Wate</li> <li>Drai</li> <li>Dry-</li> <li>Satu</li> <li>X Geo</li> <li>Shal</li> </ul>	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         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)	e required	Water-Stain 1, 2, 4A Salt Crust (f Aquatic Inve Hydrogen S Oxidized Rh Presence of Recent Iron	ed Leaves , <b>and 4B)</b> B11) ertebrates Sulfide Odd hizosphere f Reduced Reduction	(B13) or (C1) es along Iron (C4 n in Tilleo	iving Roo ) I Soils (C6	ts (C3) )	Watu Watu Drai Dry- Satu Satu Shal Shal	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) 2-Neutral Test (D5)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         X         High Water Table (A2)         X         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)		Water-Stain 1, 2, 4A Salt Crust (f Aquatic Inve Hydrogen S Oxidized Rh Presence of Recent Iron Stunted or S	ed Leaves , <b>and 4B)</b> B11) ertebrates sulfide Odd hizosphere f Reduced Reduction Stressed F	(B13) or (C1) es along Iron (C4 n in Tilleo Plants (D	iving Roo ) I Soils (C6	ts (C3) )	Watu Watu Drai Dry- Satu Satu Shal FAC Rais	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         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 Image	agery (B7	Water-Stain 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh Presence of Recent Iron Stunted or S Other (Expla	ed Leaves , <b>and 4B)</b> B11) ertebrates sulfide Odd hizosphere f Reduced Reduction Stressed F	(B13) or (C1) es along Iron (C4 n in Tilleo Plants (D	iving Roo ) I Soils (C6	ts (C3) )	Watu Watu Drai Dry- Satu Satu Shal FAC Rais	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) 2-Neutral Test (D5)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         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 Image         Sparsely Vegetated Concave S	agery (B7	Water-Stain 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh Presence of Recent Iron Stunted or S Other (Expla	ed Leaves , <b>and 4B)</b> B11) ertebrates sulfide Odd hizosphere f Reduced Reduction Stressed F	(B13) or (C1) es along Iron (C4 n in Tilleo Plants (D	iving Roo ) I Soils (C6	ts (C3) )	Watu Watu Drai Dry- Satu Satu Shal FAC Rais	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         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 Image	agery (B7	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (f</li> <li>Aquatic Inve</li> <li>Hydrogen S</li> <li>Oxidized Rf</li> <li>Presence of</li> <li>Recent Iron</li> <li>Stunted or S</li> <li>Other (Expla</li> </ul>	ed Leaves , <b>and 4B)</b> B11) ertebrates sulfide Odd hizosphere f Reduced Reduction Stressed F ain in Rem	(B13) or (C1) es along Iron (C4 n in Tilleo Plants (D	iving Roo ) I Soils (C6	ts (C3) )	Watu Watu Drai Dry- Satu Satu Shal FAC Rais	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         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 Image         Field Observations:	agery (B7	<ul> <li>Water-Stain</li> <li>1, 2, 4A</li> <li>Salt Crust (f</li> <li>Aquatic Inve</li> <li>Hydrogen S</li> <li>Oxidized Rf</li> <li>Presence of</li> <li>Recent Iron</li> <li>Stunted or S</li> <li>Other (Explain</li> </ul>	ed Leaves , <b>and 4B)</b> B11) ertebrates sulfide Odd hizosphere f Reduced Reduction Stressed F ain in Rem	(B13) or (C1) es along Iron (C4 n in Tilleo Plants (D	iving Roo ) I Soils (C6	ts (C3) )	Watu Watu Drai Dry- Satu Satu Shal FAC Rais	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         X         High Water Table (A2)         X         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 Image         Sparsely Vegetated Concave S         Field Observations:         Surface Water Present?	agery (B7 Surface (B	□       Water-Stain         1, 2, 4A         □       Salt Crust (f         □       Aquatic Inve         □       Hydrogen S         □       Oxidized Rf         □       Presence of         □       Recent Iron         □       Stunted or S         )       □         0       Other (Expland)         8)       Depth (inches)	ed Leaves , and 4B) B11) ertebrates Gulfide Odd nizosphere f Reduced Reduction Stressed F ain in Rem <u>p: None</u>	(B13) or (C1) es along l Iron (C4 n in Tilleo Plants (D narks)	iving Roo ) I Soils (C6	ts (C3) )	Watu Watu Drai Dry- Satu Satu Shal FAC Rais	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         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 Image         Sparsely Vegetated Concave S         Field Observations:         Surface Water Present?         Year         Water Table Present?	agery (B7 Surface (B s □ No	□       Water-Stain         1, 2, 4A         □       Salt Crust (f         □       Aquatic Inve         □       Hydrogen S         □       Oxidized Rf         □       Presence of         □       Recent Iron         □       Stunted or S         )       □         Other (Expland)         B	ed Leaves , and 4B) B11) ertebrates Gulfide Odd hizosphere f Reduced Reduction Stressed F ain in Rem ): None ): 8 / No	(B13) or (C1) es along Iron (C4 n in Tilleo Plants (D narks)	iving Roo ) Soils (C6 )) ( <b>LRR A</b> )	ts (C3) )	U Watu Drai Dry- Satu Satu Shal FAC Rais Fros	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) Ilow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         Image: Surface Water Table (A2)         Image: Surface Water Table (A2)         Image: Surface Water Marks (B1)         Image: Sediment Deposits (B2)         Image: Drift Deposits (B3)         Image: Algal Mat or Crust (B4)         Image: Iron Deposits (B5)         Image: Surface Soil Cracks (B6)         Image: Inundation Visible on Aerial Image: Sparsely Vegetated Concave Signal Surface Water Present?         Field Observations:         Surface Water Present?       Yes         Water Table Present?       Yes         Saturation Present?       Yes         (includes capillary fringe)       Yes	agery (B7 Surface (B s □ No s ⊠ No s ⊠ No	□       Water-Stain         1, 2, 4A         □       Salt Crust (f         □       Aquatic Inve         □       Hydrogen S         □       Oxidized Rf         □       Presence of         □       Recent Iron         □       Stunted or S         ○       Other (Expland)         B)       Depth (inches)         □       Depth (inches)         □       Depth (inches)	ed Leaves , and 4B) B11) ertebrates Gulfide Odd hizosphere f Reduced Reduction Stressed F ain in Rem p: <u>None</u> p: <u>8 / No</u> p: <u>8 / No</u>	(B13) or (C1) es along l Iron (C4 n in Tilleo Plants (D narks) ne ne	Living Roo ) Soils (C6 I) (LRR A)	ts (C3) ) and Hyd	Watu Watu Drai Dry- Satu Satu Shal FAC Rais Fros	er-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) llow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) ( <b>LRR A</b> ) st-Heave Hummocks (D7)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         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 Image         Sparsely Vegetated Concave S         Field Observations:         Surface Water Present?       Yes         Water Table Present?       Yes         Saturation Present?       Yes         (includes capillary fringe)       Describe Recorded Data (stream groups)	agery (B7 Surface (B s □ No s ⊠ No s ⊠ No jauge, mo	□       Water-Stain         1, 2, 4A         □       Salt Crust (f         □       Aquatic Inve         □       Hydrogen S         □       Oxidized Rf         □       Presence of         □       Recent Iron         □       Stunted or S         )       □         ○       Other (Expland)         8)       Depth (inches)         □       Depth (inches)         □       Depth (inches)         □       Depth (inches)	and Leaves , and 4B) B11) ertebrates sulfide Odd hizosphere f Reduced Reduction Stressed F ain in Rem : <u>None</u> : <u>8 / Noi</u> : <u>8 / Noi</u> hotos, pre	(B13) or (C1) es along l Iron (C4 n in Tilleo Plants (D narks) ne ne ne	Living Roo )   Soils (C6  ) ( <b>LRR A</b> )   Wett	ts (C3) ) and Hyd	Watu Watu Drai Dry- Satu Shal Shal FAC Rais Fros	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) llow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         Image: Surface Water (A1)         Image: Surface Water Table (A2)         Image: Surface Water (A3)         Image: Water Marks (B1)         Image: Sediment Deposits (B2)         Image: Drift Deposits (B3)         Image: Algal Mat or Crust (B4)         Iron Deposits (B5)         Image: Surface Soil Cracks (B6)         Inundation Visible on Aerial Image: Sparsely Vegetated Concave Strengt         Field Observations:         Surface Water Present?       Yes         Saturation Present?       Yes         Mater Table Recorded Data (stream genesities Concave Streage)       Monitoring Well (MP-26) local	agery (B7 Surface (B s □ No s ⊠ No s ⊠ No jauge, mo	□       Water-Stain         1, 2, 4A         □       Salt Crust (f         □       Aquatic Inve         □       Hydrogen S         □       Oxidized Rf         □       Presence of         □       Recent Iron         □       Stunted or S         )       □         ○       Other (Expland)         8)       Depth (inches)         □       Depth (inches)         □       Depth (inches)         □       Depth (inches)	and Leaves , and 4B) B11) ertebrates sulfide Odd hizosphere f Reduced Reduction Stressed F ain in Rem : <u>None</u> : <u>8 / Noi</u> : <u>8 / Noi</u> hotos, pre	(B13) or (C1) es along l Iron (C4 n in Tilleo Plants (D narks) ne ne ne	Living Roo )   Soils (C6  ) ( <b>LRR A</b> )   Wett	ts (C3) ) and Hyd	Watu Watu Drai Dry- Satu Shal Shal FAC Rais Fros	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) llow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one         Surface Water (A1)         Image: Surface 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 Image         Sparsely Vegetated Concave S         Field Observations:         Surface Water Present?         Year         Saturation Present?         Year         Mater Table Present?         Year         Mater Table Present?         Year         Monitoring Well (MP-26) local         Remarks:	agery (B7 Surface (B s □ No s ⊠ No s ⊠ No gauge, mo ation su	□       Water-Stain         1, 2, 4A         □       Salt Crust (f         □       Aquatic Inve         □       Hydrogen S         □       Oxidized Rf         □       Presence of         □       Recent Iron         □       Stunted or S         ○       Other (Expland)         □       Depth (inches)         □       Depth (inches)         □       Depth (inches)         □       Depth (inches)         □       Depth (inches)	ed Leaves , and 4B) B11) ertebrates Gulfide Odd hizosphere f Reduced Reduction Stressed F ain in Rem p: <u>None</u> p: <u>8 / Noi</u> botos, pre-	(B13) or (C1) es along l Iron (C4 n in Tilleo Plants (D narks) ne ne ne vious ins eks of h	Living Roo )   Soils (C6  ) (LRR A)  ) (LRR A)     Weth pections),   igh grou	ts (C3) ) and Hyd if availal indwat	Watu Watu Drai Dry- Satu Satu Shal Shal FAC Rais Fros	er-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) nage Patterns (B10) Season Water Table (C2) uration Visible on Aerial Imagery (C9) morphic Position (D2) llow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)

high groundwater for 2+ consecutive weeks during the growing season, meeting primary indicators A2 and A3.

Project/Site: 1244.001 - Puget Western	City/County:	Chehalis / Lewis	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western		State: WA	_ Sampling Point: <u>MP-27</u>
Investigator(s): Erin Harker, Ryan Krapp	S	Section, Township, Range: <u>11, 13</u>	N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor		(concave, convex, none): Conca	
Subregion (LRR): <u>A2</u>	Lat: 46.621942	Long: <u>-122.899900</u>	60 Datum: WGS 84
Soil Map Unit Name: Lacamas silt loam, 0 to 3 p	percent slopes	NWI classific	ation: N/A
Are climatic / hydrologic conditions on the site typical for	_	No 🗵 (If no, explain in Remarks.	
Are Vegetation, Soil, or Hydrology	_ significantly disturbed?	Are "Normal Circumstances" pre	esent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology	_ naturally problematic?	(If needed, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach site m	nap showing sampling	point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes 🗵 No	0 🗌 🛛 Ia tha	Commission Arres	
Hydric Soil Present? Yes 🗵 No		Sampled Area	
Wetland Hydrology Present? Yes 🗌 No		n a Wetland? Yes 🗌 I	
Remarks: Not all three wetland criteria met; only hydrophytic vegetatio	on and hydric soil present. Data collected u	upslope of Wetland T. Vegetation was mowed at in	nitial well installation, updated vegetation data

Not all three wetland criteria met; only hydrophytic vegetation and hydric soil present. Data collected upslope of Wetland T. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-27) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute			Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2				Total Number of Dominant	
3					(B)
4				Demonstrat Demonstration	
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
Sapling/Shrub Stratum (Plot size: <u>30 ft</u> )					()
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	
5				FAC species x 3 =	
	0	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>10 ft</u> )				UPL species x 5 =	
1. Agrostis capillaris	50	Yes	FAC	Column Totals:         (A)	
2. Holcus lanatus	40	Yes	FAC		_ (D)
3. Schedonorus arundinaceus	10	No	FAC	Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				☑ Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 <sup>1</sup>	
8				Morphological Adaptations <sup>1</sup> (Provide suppor data in Remarks or on a separate sheet)	
9				☐ Wetland Non-Vascular Plants <sup>1</sup>	
10		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11	400	·		<sup>1</sup> Indicators of hydric soil and wetland hydrology r	,
Woody Vine Stratum (Plot size: <u>30 ft</u> )	100	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
	0	= Total C	over	Present? Yes X No	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria met thro	ough dom	ninance t	est due to	a dominance of facultative species typic	cal of

upland fields.

# SOIL

Profile Desc	ription: (Describ	e to the d	epth ne	eded to docu	ment the i	ndicator	or confir	m the at	osence	of indicators.)	
Depth	Matrix			Redo	x Features	<u>s</u>					
(inches)	Color (moist)			o <u>r (moist)</u>		Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks	
0 - 8	10YR 2/1	98	1.5	YR 4/6	2	С	Μ	SiLo		Silt loam	_
8 - 16	10YR 2/1	93	7.5	YR 4/6	7	С	Μ	SiCIL	0	Silty clay loam	
16 - 18	5YR 4/1	93	7.5	YR 5/6	7	С	Μ	CILo		Clay loam	
											_
						·					-
						· <u> </u>					_
						·					_
											_
<sup>1</sup> Type: C=Co	oncentration, D=De	epletion, R	M=Red	uced Matrix, C	S=Covered	d or Coate	ed Sand G	Grains.	<sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.	
	ndicators: (Appl									ors for Problematic Hydric Soils <sup>3</sup> :	
Histosol (	(A1)			Sandy Redox (S	S5)			C	] 2 cm	n Muck (A10)	
🔲 Histic Ep	ipedon (A2)			Stripped Matrix	(S6)			E		Parent Material (TF2)	
Black His				Loamy Mucky N			MLRA 1	) [		Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed I	. ,			Ľ	] Othe	er (Explain in Remarks)	
•	Below Dark Surfa	ce (A11)		Depleted Matrix				3			
	rk Surface (A12) ucky Mineral (S1)			Redox Dark Su Depleted Dark \$	. ,	7)		5		ors of hydrophytic vegetation and nd hydrology must be present,	
	leyed Matrix (S4)			Redox Depress	•	()				is disturbed or problematic.	
•	ayer (if present):			Redex Depress					unico		
Type: NO	• • • •										
Depth (inc	<sub>ches):</sub> N/A			-				Hydi	ric Soil	Present? Yes 🗵 No 🗌	
Remarks:	,							Tiyu	10 3011		
	oritorio no ot the	منتعام أنمد	liaatau		·c						
Hydric soli	criteria met thr	ougnind	licator	S ATZ and F	0.						
HYDROLO	GY										
Wetland Hyd	drology Indicators	s:									
Primary Indic	ators (minimum of	one requi	red; ch	eck all that appl	y)				Secor	ndary Indicators (2 or more required)	
Surface V	Vater (A1)			🗌 Water-Stai	ned Leave	es (B9) ( <b>e</b>	xcept ML	.RA	ωw	ater-Stained Leaves (B9) (MLRA 1, 2,	,
🔲 High Wat	ter Table (A2)			1, 2, 4/	A, and 4B)	)				4A, and 4B)	
Saturatio	n (A3)			Salt Crust	(B11)				🗌 Dr	rainage Patterns (B10)	
🔲 Water Ma	arks (B1)			Aquatic Inv	vertebrates	s (B13)			🗌 Dr	ry-Season Water Table (C2)	
Sedimen	t Deposits (B2)			Hydrogen	Sulfide Od	or (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C9	<del>)</del> )
Drift Dep	osits (B3)				Rhizospher	es along	Living Ro	ots (C3)	🗌 Ge	eomorphic Position (D2)	
Algal Mat	t or Crust (B4)			Presence of	of Reduce	d Iron (C4	4)		🗌 Sł	hallow Aquitard (D3)	
Iron Dep	osits (B5)			Recent Iro	n Reductic	on in Tille	d Soils (C	6)	🗌 F <i>I</i>	AC-Neutral Test (D5)	
Surface S	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) ( <b>LRR A</b>	<b>A</b> )	🗌 Ra	aised Ant Mounds (D6) ( <b>LRR A</b> )	
Inundation	n Visible on Aeria	Imagery (	B7)	Other (Exp	lain in Rer	marks)			🗌 Fr	rost-Heave Hummocks (D7)	
Sparsely	Vegetated Concar	ve Surface	e (B8)								
Field Observ	vations:				Nama						
Surface Wate	er Present?	Yes 🗌	No 🗙	Depth (inches							
Water Table	Present?	Yes 🗌	No 🗙	Depth (inches							
Saturation Pr		Yes 🗌	No 🗙	Depth (inches	<sub>s):</sub> <u>None</u>		Wet	tland Hy	drolog	y Present? Yes 🗌 No 🗵	
(includes cap		maquaq	monitor	ing well parial	nhotos pr		nactional		blo:		
	corded Data (strea			-							
	Well (MP-27)	Selicinxe	a nolg	enine nyaroi	ogy duri	ng the (	Jiowing	seasor	ι.		
Remarks:		oric			arak 004	0,	notell				
										019 delineation. Additionally,	
inyurulogy I	nonitoring duft	ng the g	rowing	y season wa	e norael	me, m	ereroreit	uns pio	i uues	s not meet wetland hydrology	

criteria.

Project/Site: 1244.001 - Puget Western City/	<sub>County:</sub> Chehalis / Lewis	Sampling Date: 3/6/19 & 6/28/19
Applicant/Owner: Puget Western	State: WA	Sampling Point: MP-28
Investigator(s): Erin Harker, Ryan Krapp	Section, Township, Range: <u>11, 13</u>	N, 02 W
Landform (hillslope, terrace, etc.): Valley Floor Loc	al relief (concave, convex, none): <u>None</u>	
Subregion (LRR): <u>A2</u> Lat: <u>46.622</u>	2118 Long: -122.8997245	55
Soil Map Unit Name: Lacamas silt loam, 0 to 3 percent slopes	NWI classifica	tion: N/A
Are climatic / hydrologic conditions on the site typical for this time of year?	∕es 🔲 No 🗷 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly disturbe	ed? Are "Normal Circumstances" pres	ent? Yes 🗵 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic	? (If needed, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site map showing san	npling point locations, transects,	important features, etc.
Hydrophytic Vegetation Present?       Yes I No X         Hydric Soil Present?       Yes X No I         Wetland Hydrology Present?       Yes No X	Is the Sampled Area within a Wetland? Yes 🗌 N	o 🗵

Remarks: Not all three wetland criteria met; only hydric soil present. Data collected in upland area northeast of Wetland T. Vegetation was mowed at initial well installation, updated vegetation data collected during June site visit. Monitoring well (MP-28) location; monitoring data utilized to support hydrology determination. While precipitation was within normal during March 2019 investigation, it was below average at 58 percent of normal during the June investigation and throughout the monitoring period.

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

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft)</u> 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total C	over	That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
	0	= Total C	over	FACU species x 4 =
<u>Herb Stratum</u> (Plot size: <u>10 ft</u> )				UPL species x 5 =
1. Schedonorus arundinaceus	35	Yes	FAC	Column Totals: (A) (B)
2. Anthoxanthum odoratum	25	Yes	FACU	
3. Agrostis capillaris	15	No	FAC	Prevalence Index = B/A =
4. Alopecurus pratensis	10	No	FAC	Hydrophytic Vegetation Indicators:
<sub>5.</sub> Holcus lanatus	10	No	FAC	Rapid Test for Hydrophytic Vegetation
6. Dactylis glomerata	5	No	FACU	Dominance Test is >50%
7				□ Prevalence Index is $\leq 3.0^{1}$
8				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants <sup>1</sup>
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.
; (,				
1 2				Hydrophytic
۲	0	= Total C	over	Vegetation Present? Yes ☐ No ⊠
% Bare Ground in Herb Stratum 0			over	
Remarks: No hydrophytic vegetation criteria met.	Prevaler	nce Index	not warr	anted due to combined lack of hydric soils and
wetland hydrology.				

#### SOIL

Profile Desc	ripuon: (Describe	to the d	aeptn ne	eded to docun	nent the	nuicator	or confirm	n the ab	sence o	of indicators.)	
Depth	Matrix			Redo	x Feature	<u>s</u>					
(inches)	Color (moist)	%	Colc	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks	
0 - 4	10YR 3/1	100			-	-		SiLo		Silt loam with roots	
4 - 11	10YR 3/1	98	7.5	YR 4/6	2	С	PL	SiCIL	.0	Silty clay loam with roots	
11 - 17	10YR 4/1	95	7.5	YR 4/6	5	С	PL	SiCIL	.0	Silty clay loam	
17+	10YR 5/1	85	7.5	YR 6/8	15	С	PL	SiCIL	.0	Silty clay loam	
						- <u> </u>					
									2.		
	oncentration, D=Dep						ed Sand Gr			ation: PL=Pore Lining, M=Matrix.	
	ndicators: (Applic	able to				ea.)				s for Problematic Hydric Soils <sup>3</sup> :	
Histosol (	, ,			Sandy Redox (S	-					Muck (A10)	
	ipedon (A2)			Stripped Matrix ( Loamy Mucky M	. ,	) (oxcont		_		Parent Material (TF2) Shallow Dark Surface (TF12)	
	n Sulfide (A4)			Loamy Gleyed N			WILKA I)			(Explain in Remarks)	
	Below Dark Surfac	ρ (Δ11)		Depleted Matrix		)		L			
	rk Surface (A12)	0 (/ (/ / / )		Redox Dark Sur				3	ndicator	s of hydrophytic vegetation and	
	ucky Mineral (S1)			Depleted Dark S	. ,	7)				d hydrology must be present,	
	eyed Matrix (S4)			Redox Depressi	•	- /				disturbed or problematic.	
-	ayer (if present):				( )						
Type: NO				_							
Depth (inc	<sub>ches):</sub> N/A			-				Hydr	ric Soil I	Present? Yes 🗵 No 🗌	
Remarks:								. i yai			
	critoria mot thro	uah in	diaatar								
					6						
riyano oon		ugnin	uicator	s A11 and F	6.						
		ugirin	uicalui	S A11 and F	6.						
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during well install, but was too deep (>12") to meet primary indicator A2. Additionally, this monitoring well exhibited borderline hydrology during the growing season, therefore does not meet wetland hydrology criteria.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{A}$ Date of site visit:  $\underline{6/28/20}$ Rated by Ryan Krapp & Jacob LaymanTrained by Ecology?  $\checkmark$  Yes \_\_\_\_\_No Date of training  $\underline{10/18 & 11/19}$ HGM Class used for rating SlopeWetland has multiple HGM classes? Y  $\checkmark$  N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ESRI ArcGIS

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	L	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	5	3	14

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	Ι	II		
Wetland of High Conservation Value	I			
Bog	I			
Mature Forest	I			
Old Growth Forest		Ι		
Coastal Lagoon	Ι	II		
Interdunal	III	III IV		
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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		
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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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)?

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.

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).

XNO – go to 4

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

4. Does the entire wetland unit **meet all** of the following criteria? X 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 <u>A</u>

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 dro 100 ft of horizontal distance)</i> Slope is 1% or less Slope is > 1%-2% Slope is > 2%-5%	op in elevation for every points = 3 points = 2 points = 1	1
Slope is greater than 5% S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS de	points = 0	0
<ul> <li>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 wetl have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mo than 6 in.</li> <li>Dense, uncut, herbaceous plants &gt; 90% of the wetland area</li> <li>Dense, uncut, herbaceous plants &gt; ½ of area</li> <li>Dense, woody, plants &gt; ½ of area</li> <li>Dense, uncut, herbaceous plants &gt; ¼ of area</li> <li>Dense, uncut, herbaceous plants &gt; ¼ of area</li> <li>Does not meet any of the criteria above for plants</li> </ul>		1
Total for S 1 Add the	points in the boxes above	2
<b>Rating of Site Potential</b> If score is: $12 = H$ 6-11 = M $\times$ 0-5 = L S 2.0. Does the landscape have the potential to support the water quality function		the first page
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that g	enerate pollutants? Yes = 1 No = 0	1

Yes = 1 NO = 0	
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	0
Total for S 2Add the points in the boxes above	1

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	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	1
S 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 unit is found. Yes = 2 No = 0	2
Total for S 3Add the points in the boxes above	3

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 <u>A</u>

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream ero	sion
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	0
<b>Rating of Site Potential</b> If score is: $1 = M \times 0 = L$ 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 0 surface runoff? Yes = 1 No = 0

**Rating of Landscape Potential** If score is:  $1 = M \times \overline{0 = L}$ 

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	2
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 = $0$	
Total for S 6Add the points in the boxes above	2

**Rating of Value** If score is:  $\times$  **2-4 = H 1 = M 0 = L** 

Record the rating on the first page

# NOTES and FIELD OBSERVATIONS:

The site is only occasionally tilled and/or grazed. Water quality my be affected at times however, rooted grasses for having is the dominant condition. Point given for Water Quality (2.1) but not Hydrology (5.1).

These questions apply to wetlands of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provide important habitatH 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.        Aquatic bed       4 structures or more: points = 4        X Emergent       3 structures: points = 2        Scrub-shrub (areas where shrubs have > 30% cover)       2 structures: points = 1        Forested (areas where trees have > 30% cover)       1 structure: points = 0         If the unit has a Forested class, check if:      The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)         that each cover 20% within the Forested polygon       1	0
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).        Permanently flooded or inundated       4 or more types present: points = 3        Seasonally flooded or inundated       3 types present: points = 2        Occasionally flooded or inundated       2 types present: points = 1        Saturated only       1 type present: points = 0        Permanently flowing stream or river in, or adjacent to, the wetland       2 points        Seasonally flowing stream in, or adjacent to, the wetland       2 points        Seasonally flowing stream in, or adjacent to, the wetland       2 points	0
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> . <i>Different patches of the same species can be combined to meet the size threshold and you do not have to name</i> <i>the species.</i> <b>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</b> If you counted: > 19 species 5 - 19 species < 5 species points = 0	1
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points All three diagrams in this row are HIGH = 3points Decide from the diagrams Decide from the diagrams Decide from the diagrams I the classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes or three classes and open water, the rating is always high. Decide four or more plant classes and open water, the rating is always high. Decide four or more plant classes and open water, the rating is always high. Decide four or more plant classes and open water, the rating is always high. Decide four or more plant classes and open water, the rating is always high. Decide four or more plant classes and open water, the rating is always high. Decide four or more plant classes and open water, the rating is always high. Decide four or more plant classes and open water, the	0

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)Standing snags (dbh > 4 in) within the wetlandUndercut 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)Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present ( <i>cut shrubs or trees that have not yet weathered where wood is exposed</i> ) At least 1/2 or of this, stemmed persistent plants or weady branches are present in creas that are	1
<ul> <li>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></li> <li>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>)</li> </ul>	
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_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?		
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] If total accessible habitat is:	=%	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.89500000000</u> % points = 3 points = 2 points = 1 points = 0	1
≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in the	boxes above	-1
Rating of Landscape Potential If score is: $4-6 = H$ $1-3 = M$ $\times < 1 = L$ Record	d the rating on t	he 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	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> </ul>	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— 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 of the starting	n the first page

#### Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

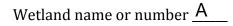
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>A</u>

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Category

SC 4.0. Forested Wetlands	
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? If you answer YES you will still need to rate	
the wetland based on its functions.	
<ul> <li>— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of</li> </ul>	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
— Mature forests (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).	
□Yes = Category I INO = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
$\Box Yes - Go to SC 5.1  \Box No = Not a wetland in a coastal lagoon$	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- menued grazelend.	
mowed grassland. — The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
— The wetland is larger than $\gamma_{10}$ ac (4350 ft ) $\Box Yes = Category I  \Box No = Category II$	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
— Grayland-Westport: Lands west of SR 105	
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
□Yes – Go to SC 6.1  Imes No = not an interdunal wetland for rating	
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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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?	
$\Box Yes = Category II \Box No - Go to SC 6.3$	
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?  Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): BDate of site visit:  $\frac{6/28/20}{2}$ Rated by Ryan Krapp & Jacob LaymanTrained by Ecology?  $\checkmark$  Yes \_\_\_\_\_No Date of training  $\frac{10/18 & 11/19}{2}$ HGM Class used for rating SlopeWetland has multiple HGM classes? Y  $\checkmark$  N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ESRI ArcGIS

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
	Circle the appropriate ratings			
Site Potential	L	L	L	
Landscape Potential	М	L	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	5	3	14

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	Ι	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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.

XNO − 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).

XNO – 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 <u>B</u>

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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)Slope is 1% or lesspoints = 3Slope is > 1%-2%points = 2Slope is > 2%-5%points = 1Slope is greater than 5%points = 0	1
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions): Yes = 3 No = 0	0
<ul> <li>S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:</li> <li>Choose the points appropriate for the description that best fits the plants in the wetland. 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.</li> <li>Dense, uncut, herbaceous plants &gt; 90% of the wetland area points = 6 points = 1 points = 1 voints = 1 voints = 1 voints = 0</li> </ul>	1
Total for S 1Add the points in the boxes above	2
Rating of Site Potential If score is: $12 = H$ $6-11 = M$ $\times 0-5 = L$ Record the rating onS 2.0. Does the landscape have the potential to support the water quality function of the site?	the first page
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	1
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	0
Total for S 2Add the points in the boxes above	1

**Rating of Landscape Potential** If score is:  $\times$  **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	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	1
S 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 unit is found. Yes = 2 No = 0	2
Total for S 3Add the points in the boxes above	3

Rating of Value If score is:  $\times 2-4 = H$  \_\_\_1 = M \_\_\_0 = L

Record the rating on the first page

<u>SLOPE WETLANDS</u>	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream ero	sion
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	0
Rating of Site Potential If score is: $1 = M$ $\times 0 = L$ Record the rating of	n 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: $1 = M \times 0 = L$ Record the rating onRecord 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	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	

Total for S 6

Rating of Value If score is: X 2-4 = H \_\_\_1 = M \_\_\_0 = L

Record the rating on the first page

Yes = 2 No = 0

Add the points in the boxes above

0

2

#### NOTES and FIELD OBSERVATIONS:

The site is only occasionally tilled and/or grazed. Water quality my be affected at times however, rooted grasses for haying is the dominant condition. Point given for Water Quality (2.1) but not Hydrology (5.1).

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid		_
H 1.0. Does the site have the potential to provide habitat?		-
H 1.1. Structure of plant community: Indicators are Cowardin classes and st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add t Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedOccasionally flooded or inundatedOccasionally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlatSeasonally flowing stream in, or adjacent to, the wetlat	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the su the species. <b>Do not include Eurasian milfoil, reed canarygrass, pur</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ardin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. If you	0

<ul> <li>H 1.5. Special habitat features:</li> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or 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)</li> <li>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></li> <li>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></li> </ul>	1
At least 74 ac of thin-sternined persistent plants of woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) <u>×</u> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_15-18 = H \_\_\_7-14 = M X0-6 = L

Record the rating on the first page

H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
<i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses)	0 /2] =%	
If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: 11.55 % undisturbed habitat + [(% moderate and low intensity land uses)	[22.69/2] = <u>22.895000000000</u> %	
Undisturbed habitat > 50% of Polygon	points = 3	1
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	1
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2 Add the po	pints in the boxes above	-1

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	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— 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	
<b>Rating of Value</b> If score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the rating of the rating of the rating of the ratio of th	n the first page

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

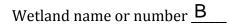
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>B</u>

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
Yes = Category I No - Go to SC 1.2	
SC 1.2. Is the wetland 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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? $\Box$ Yes – Go to SC 2.2 $\boxtimes$ No – Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I  ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b> <b>the wetland based on its functions.</b>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I	
SC 5.0. Wetlands in Coastal Lagoons         Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?         — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks         — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)         □Yes – Go to SC 5.1       ☑No = Not a wetland in a coastal lagoon         SC 5.1. Does the wetland meet all of the following three conditions?       — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).         — 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 is larger than <sup>1</sup> / <sub>10</sub> ac (4350 ft <sup>2</sup> )         □Yes = Category I       □No = Category II	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to SC 6.1       ⊠No = not an interdunal wetland for rating         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)?       □Yes = Category I       □No – Go to SC 6.2         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?       □Yes = Category II       □No – Go to SC 6.3         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?       □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{C}$  \_\_\_\_\_ Date of site visit:  $\underline{^{6/28/19}}$ Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology?  $\checkmark$  Yes \_\_\_\_ No Date of training  $\underline{^{10/18 & 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog	I	
Mature Forest	I	
Old Growth Forest	Ι	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>C</u>

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wat	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no	-	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	rdin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
	points = 3	0
	points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the bo	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

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. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4	
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0	
Total for D 4Add the points in the boxes above	4	
Rating of Site Potential If score is:12-16 = H $6-11 = M$ $\times$ 0-5 = LRecord 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	1	
Total for D 5Add the points in the boxes above	1	
Rating of Landscape Potential If score is:       3 = H       X 1 or 2 = M       0 = L       Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-	
<ul> <li>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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> <li>There are no problems with flooding downstream of the wetland.</li> </ul> </li> </ul>	2	
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	2	
Rating of Value If score is: $\times 2-4 = H$ 1 = M0 = LRecord the rating on the		

These questions apply to wetlands	of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provide	e important habitat	-
H 1.0. Does the site have the potential to provide habitat?		r
H 1.1. Structure of plant community: Indicators are Cowardin classes and str Cowardin plant classes in the wetland. Up to 10 patches may be comb of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shructure that each cover 20% within the Forested polygon	ined for each class to meet the threshold e number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the w more than 10% of the wetland or ¼ ac to count ( <i>see text for description</i> Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland	ans of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 1 Different patches of the same species can be combined to meet the siz the species. <b>Do not include Eurasian milfoil, reed canarygrass, purp</b> If you counted: > 19 species 5 - 19 species < 5 species	e threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowar the classes and unvegetated areas (can include open water or mudflat have four or more plant classes or three classes and open water, the re- None = 0 points All three diagrams in this row are HIGH = 3points	ts) is high, moderate, low, or none. If you	0

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points</i>.</li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or 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)</li> <li>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>)</li> <li>At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are</li> </ul>	1
permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i> <ul> <li>Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)</li> </ul>	
Total for H 1     Add the points in the boxes above	3

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = 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?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 % If total accessible habitat is:	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	Ŭ
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.         Calculate: 11.55       % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1	1
Undisturbed habitat < 10% of 1 km Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon: If> 50% of 1 km Polygon is high intensity land use≤ 50% of 1 km Polygon is high intensitypoints = 0	-2
Total for H 2 Add the points in the boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M $\times$ < 1 = L Record the rating on	the first page

H 3.0. Is the habitat provided by the site valuable to society?	-
<ul> <li>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.</li> <li>Site meets ANY of the following criteria:</li> </ul>	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li>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</li> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> </ul>	0
× Site does not meet any of the criteria above points = 0	
Rating of Value If score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the rating of	n the first page

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

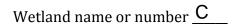
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number  $\underline{C}$ 

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ⊠No= <b>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 = Category I No - Go to SC 1.2	
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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I  ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I  ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons         Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?         — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks         — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)         □Yes – Go to SC 5.1       ⊠No = Not a wetland in a coastal lagoon         SC 5.1. Does the wetland meet all of the following three conditions?       — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).         — 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 is larger than <sup>1</sup> / <sub>10</sub> ac (4350 ft <sup>2</sup> )	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         □Yes = Category I         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): D Date of site visit: 6/28/19 Rated by Ryan Krapp & Jacob Layman Trained by Ecology? Yes No Date of training 10/18 & 11/19

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	Ι	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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 D

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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	or quality	
Water Quality Functions - Indicators that the site functions to improve wat D 1.0. Does the site have the potential to improve water quality?	lei 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 (n	o outlet). points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing		2
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	0
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > ½ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the built	oxes above	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	0
D 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 the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	2
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

E

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0
Total for D 4Add the points in the boxes above	2
Rating of Site Potential       If score is:       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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 = H _ X 1 or 2 = M0 = L       Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best matches conditions around the wetland unit being rated</i>. <i>Do not add points</i>. <u><i>Choose the highest score if more than one condition is met</i></u>. 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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> <li>There are no problems with flooding downstream of the wetland.</li> </ul> </li> </ul>	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 No = 0	
Total for D 6     Add the points in the boxes above	2
Rating of Value If score is: $\times 2-4 = H$ 1 = M0 = L Record the rating on the	first page

<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important of the site have the potential to provide habitat?		_
<ul> <li>1.1. Structure of plant community: Indicators are Cowardin classes and strata with Cowardin plant classes in the wetland. Up to 10 patches may be combined for of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the numberAquatic bed</li> <li>Aquatic bed</li> <li>Emergent</li> <li>Scrub-shrub (areas where shrubs have &gt; 30% cover)</li> <li>Forested (areas where trees have &gt; 30% cover)</li> <li>If the unit has a Forested class, check if:</li> <li>The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, here</li> </ul>	or each class to meet the threshold ber of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
Seasonally flooded or inundated Coccasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland	•	1
<ul> <li>1 1.3. Richness of plant species</li> <li>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>.</li> <li>Different patches of the same species can be combined to meet the size three the species.</li> <li>Do not include Eurasian milfoil, reed canarygrass, purple loos</li> <li>If you counted: &gt; 19 species</li> <li>5 - 19 species</li> <li>&lt; 5 species</li> </ul>	-	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin platthe classes and unvegetated areas (can include open water or mudflats) is his have four or more plant classes or three classes and open water, the rating is None = 0 points All three diagrams n this row are HIGH = 3points	ants classes (described in H 1.1), or igh, moderate, low, or none. <i>If you</i>	0

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or 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)</li> <li>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></li> </ul>	0
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> 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> )	
Total for H 1     Add the points in the boxes above	2

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = L** 

Record the rating on the first page

-1

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 If total accessible habitat is:	%	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon pc	oints = 3	0
20-33% of 1 km Polygon pc	oints = 2	Ŭ
10-19% of 1 km Polygon pc	oints = 1	
< 10% of 1 km Polygon pc	oints = 0	
Undisturbed habitat > 50% of PolygonpcUndisturbed habitat 10-50% and in 1-3 patchespcUndisturbed habitat 10-50% and > 3 patchespc	9500000000% Dints = 3 Dints = 2 Dints = 1 Dints = 0	1
≤ 50% of 1 km Polygon is high intensity pc	ts = (- 2) pints = 0	-2
Total for H 2 Add the points in the boxe	s above	-1
<b>Rating of Landscape Potential</b> If score is: $4-6 = H$ $1-3 = M$ $\times < 1 = L$ Record the	rating on t	he 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	he highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
— It provides habitat for Threatened or Endangered species (any plant or animal on the state	e or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Re</li> </ul>	esources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive p</li> </ul>	lan, 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	
<b>Rating of Value</b> If score is: $2 = H$ $1 = M \times 0 = L$ Re	cord the rating on	the first page

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# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

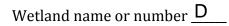
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number D

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
□Yes = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, 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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
$\Box Yes = Category I  \boxed{No = Not a WHCV}$	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <u>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</u>	
Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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 = Is a Category I bog	
<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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b>	
the wetland based on its functions.	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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.	
<ul> <li>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
<ul> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)</li> <li>Yes – Go to SC 5.1 XNo = Not a wetland in a coastal lagoon</li> </ul>	
<ul> <li>SC 5.1. Does the wetland meet all of the following three conditions?</li> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> </ul>	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> ) $\Box$ Yes = <b>Category I</b> $\Box$ No = <b>Category II</b>	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 — Yes – Go to SC 6.1 ⊠No = not an interdunal wetland for rating	
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)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II □No – Go to SC 6.3	
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? Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{E}$  \_\_\_\_\_ Date of site visit:  $\underline{^{6/28/19}}$ Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology?  $\checkmark$  Yes \_\_\_\_ No Date of training  $\underline{^{10/18 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog		Ι
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>E</u>

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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					
D 1.0. Does the site have the potential to improve water quality?					
D 1.1. Characteristics of surface water outflows from the wetland:					
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no					
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	2			
	points = 1 points = 1				
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0			
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	rdin classes):				
Wetland has persistent, ungrazed, plants > 95% of area	points = 5				
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	0			
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1				
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area	points = 0				
D 1.4. Characteristics of seasonal ponding or inundation:					
This is the area that is ponded for at least 2 months. See description in manual.					
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0			
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland	points = 2				
Area seasonally ponded is < ¼ total area of wetland	points = 0				
Total for D 1Add the points in the bo	oxes above	2			

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

-	1:4	£	 :				Ī
-	-		 the rating	-	<b>,</b>	1 3-	

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	0	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1	
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1	
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in quest Source	tions D 2.1-D 2.3? Yes = 1 No = 0	0	
Total for D 2Add the point	s in the boxes above	2	

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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			
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	1		
D 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 the unit is found</i> )? Yes = 2 No = 0			
Total for D 3Add the points in the boxes above	3		
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page			

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0
Total for D 4Add the points in the boxes above	2
Rating of Site Potential       If score is:       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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential If score is:       3 = H × 1 or 2 = M 0 = L       Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best matches conditions around the wetland unit being rated</i>. <i>Do not add points</i>. <u><i>Choose the highest score if more than one condition is met</i></u>. 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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> <li>There are no problems with flooding downstream of the wetland.</li> </ul> </li> </ul>	2
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	2
Rating of Value If score is: $X 2-4 = H$ 1 = M0 = LRecord the rating on the	

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	le 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 st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add t Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedSeasonally flooded or inundatedOccasionally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the sa the species. <b>Do not include Eurasian milfoil, reed canarygrass, pur</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ardin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. If you	0

H 1.5. Special habitat features:         Check the habitat features that are present in the wetland. The number of checks is the number of points.        Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).        Standing snags (dbh > 4 in) within the wetland        Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m)        Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)        At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)        Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	1
strata)       Total for H 1       Add the points in the boxes above	3

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = L** 

Record the rating on the first page

- 1

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 % If total accessible habitat is:	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	Ŭ
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.         Calculate: 11.55       % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1	1
Undisturbed habitat < 10% of 1 km Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon: If> 50% of 1 km Polygon is high intensity land use≤ 50% of 1 km Polygon is high intensitypoints = 0	-2
Total for H 2 Add the points in the boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M $\times$ < 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 sco	ore
that applies to the wetland being rated.	
Site meets ANY of the following criteria: points =	: 2
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lis	ts)
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— 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
<b>Rating of Value</b> If score is: $2 = H$ $1 = M \times 0 = L$ Record the ratin	ng on the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

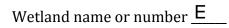
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>E</u>

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
Yes = Category I No - Go to SC 1.2	
SC 1.2. Is the wetland 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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? $\Box$ Yes – Go to SC 2.2 $\boxtimes$ No – Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b> <b>the wetland based on its functions.</b>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons         Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?         — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks         — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)         □Yes – Go to SC 5.1       ☑No = Not a wetland in a coastal lagoon         SC 5.1. Does the wetland meet all of the following three conditions?       — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).         — 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 is larger than <sup>1</sup> / <sub>10</sub> ac (4350 ft <sup>2</sup> )	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         □Yes = Category I         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{F}$  \_\_\_\_\_ Date of site visit:  $\underline{^{6/28/19}}$ Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology?  $\checkmark$  Yes \_\_\_\_ No Date of training  $\underline{^{10/18 & 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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 <u>F</u>

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wate	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no		
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing c	points = 3 putlet. points = 2	2
	points = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes =	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowar	din classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	0
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants <1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the box	kes above	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the sit	te?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No =	0 0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No =	0 1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No =	0 1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D Source	D 2.1-D 2.3? Yes = 1 No =	0
Total for D 2Add the points in th	ne boxes abo	ve 2

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

E

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?         J 1.1. Characteristics of surface water outflows from the wettand: Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing points = 0         J 2.2. Deptid of storage during wet periods; Stimate the height of point dependently flowing points = 0         J 3.2. Deptid of storage during wet periods; Stimate the height of point on of outlet with no autlet, measure from the surface of bottom of outlet points = 3 The wetland has a nuconstricted or 31 ff om surface or bottom of outlet points = 3 The wetland is a Theadwater' wetland       points = 7 O         D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of publics = 3 The wetland is a bit but has smill depressions on the surface or bottom of outlet points = 3       0         D 4.3. Contribution of the wetland to to torage in the watershed: Estimate the ratio of the area of publics = 3 The area of the basin is 10 to 100 times the area of the unit points = 0       3         D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       0         D 5.1. Does the wetland receive stormwater discharges?       Yes = 1 No = 0         D 5.2. Is >10% of the area within 150 ft of the wetland in and uses that generate excess runoff?       Yes = 1 No = 0         D 5.2. Is >10% of the area within 150 ft of the wetland in and	DEPRESSIONAL AND FLATS WETLANDS		
D 4.1. Characteristics of surface water outflows from the wetland:       points = 4         Wetland has an intermittently flowing surface water leaving it (no outlet)       points = 1         Wetland has an intermittently flowing surface water leaving it (no outlet)       points = 1         Wetland has an intermittently flowing surface outlet that is permanently flowing points = 0       2         D 4.3. Cepth of storage during wet periods: Estimate the height of ponding abox the bottom of the outlet. For wetlands with no outlet, for wetland bas an unconstricted, or slightly constricted permanently flowing optims = 0       0         D 4.3. Cepth of storage during wet periods: Estimate the height of ponding abox the bottom of the outlet. For wetlands with no outlet, neasure from the surface or bottom of outlet points = 3       0         Marks of ponding are 3 to rome above the surface or bottom of outlet points = 3       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 the tharea of the watin and unit itself.       0         The area of the basin is 10 to 100 times the area of the unit points = 0       0         D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       0         D 5.1. Does the wetland receive stormwater discharge?       Yes = 1 No = 0       0         D 5.3. Is more than 25% of the core is	Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)       points = 4         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 1       points = 1         Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing itich       points = 1         0       0.2. Depth of Storage during wet periods; Estimate the height of ponding and book the bottom of the outlet. For wetlands with no surface or bottom of outlet       points = 5         0       Narks of ponding are 3 ft or one above the surface or bottom of outlet       points = 5         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	D 4.0. Does the site have the potential to reduce flooding and erosion?		
with no outlet, measure from the surface of permanent water or if dry, the deepest part.       points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 5         Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	Wetland is a depression or flat depression with no surface water leaving it (no outlet)points = 4Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditchpoints = 1	2	
contributing surface water to the wetland to the area of the wetland unit itself.       points = 5       3         The area of the basin is 10 to 100 times the area of the unit       points = 3       points = 3         The area of the basin is 10 to 100 times the area of the unit       points = 0       points = 5         Total for D 4       Add the points in the boxes above       5         Rating of Site Potential If score is:12-16 = H6-11 = MX_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?       0         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 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       1       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       1       1         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best maches conditions around the wetland covered with would otherwise flow down, gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):       2	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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	0	
Rating of Site Potential If score is:       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?       0       0         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       1         Total for D 5       Add the points in the boxes above       1       1       1       1         D 6.0. Are the hydrologic functions provided by the site valuable to society?       Po = L       Record the rating on the first page         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 roted. Do not add points. Choose the discription that best matches 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):       9       2       2         • Flooding from groundwater is an issue in the sub-basin.       points = 1       points = 1       1       1       2	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0	3	
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       0         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       1       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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 ad points. Choose the floadbest 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):       2         • Flooding from groundwater is an issue in the sub-basin.       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 0         The existing or potential outflow from the wetland is so constrained by human or natural	Total for D 4 Add the points in the boxes above	5	
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       1       1         Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M      0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       0       0       0         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 description that best matches conditions around the wetland canuary examet that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):       2         •       Flooding problems are in a sub-basin farther down-gradient of unit.       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1       points = 0         The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot r	Rating of Site Potential If score is:       12-16 = H       6-11 = M       × 0-5 = L       Record the rating on the	first page	
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.)?       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland onit being rated. Do not add points. Choose the description that best matches conditions around 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):       2         • Flooding problems are in a sub-basin that is immediately down-gradient of unit. points = 2       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       0         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         The vesting or D 6       Add the points in the boxes	D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       2         • Flooding problems are in a sub-basin farther down-gradient of unit.       points = 2       2         • Surface flooding problems are in a sub-basin.       points = 1       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1       points = 0         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       points = 0         The existing or potential outflow from the wetland.       points = 0       0         The existing or potential outflow from the wetland is so constrained by human or natural co	D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0	
>1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1 No = 0       I         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       Image: Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the description that best matches 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):       Image: Points = 1       Points = 2       Points = 1       Points = 0       Points = 0 <td< td=""><td>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</td><td>0</td></td<>	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	
Rating of Landscape Potential If score is:3 = H _X_1 or 2 = M0 = 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):       Plooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2       points = 1       Points = 0       <	-	1	
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> </ul> <ul> <li>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</li> <li>Total for D 6</li> <li>Add the points in the boxes above</li> <li>2</li> </ul>	Total for D 5Add the points in the boxes above	1	
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> <li>There are no problems with flooding downstream of the wetland.</li> <li>points = 0</li> <li>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</li> <li>2</li> </ul>	Rating of Landscape Potential If score is:       3 = H × 1 or 2 = M 0 = L       Record the rating on the	first page	
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):       Points = 2       Points = 2       Points = 1       Points = 0       Points = 2       No = 0       Points = 2       Points = 0       Points = 2       No = 0       Points = 2       No = 0       Points = 1       Points = 1	D 6.0. Are the hydrologic functions provided by the site valuable to society?		
Yes = 2No = 00Total for D 6Add the points in the boxes above2	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	2	
Yes = 2     No = 0       Total for D 6     Add the points in the boxes above     2		0	

These questions apply to wetlands	of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provide	e important habitat	-
H 1.0. Does the site have the potential to provide habitat?		r
H 1.1. Structure of plant community: Indicators are Cowardin classes and str Cowardin plant classes in the wetland. Up to 10 patches may be comb of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shructure that each cover 20% within the Forested polygon	ined for each class to meet the threshold e number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the w more than 10% of the wetland or ¼ ac to count ( <i>see text for description</i> Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Lake Fringe wetland Freshwater tidal wetland	ans of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 1 Different patches of the same species can be combined to meet the siz the species. <b>Do not include Eurasian milfoil, reed canarygrass, purp</b> If you counted: > 19 species 5 - 19 species < 5 species	e threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowar the classes and unvegetated areas (can include open water or mudflat have four or more plant classes or three classes and open water, the re- None = 0 points All three diagrams in this row are HIGH = 3points	ts) is high, moderate, low, or none. If you	0

Wetland name or number F

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	1
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	3

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_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?		
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2 If total accessible habitat is:	.] = <u>0   %</u>	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	Ŭ
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.8950000000</u> % points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in th	e boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M< 1 = L Reco	ord the rating on t	the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<ul> <li>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.</li> <li>Site meets ANY of the following criteria: points = 2</li> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	0
<ul> <li>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</li> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> <li>x Site does not meet any of the criteria above</li> </ul>	
<b>Rating of Value</b> If score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the rating of Value If score is: $2 = H$ $1 = M$ $\times 0 = L$	n the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

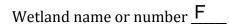
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number F

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
□Yes = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, 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. $\Box$ Yes = <b>Category I</b> $\Box$ No = <b>Category II</b>	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? $\Box$ Yes – Go to SC 2.2 $\boxtimes$ No – Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I INO = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? $\Box$ Yes – Go to <b>SC 3.3</b> $\boxtimes$ No = Is not a bog	
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 = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? If you answer YES you will still need to rate	
the wetland based on its functions.	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered capacity with as cascade crest) at least 8 trees (as (20 trees (ba) that are at least 200 years of capacity).	
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.	
— Mature forests (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).	
□Yes = Category I  ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
☐Yes – Go to <b>SC 5.1</b> ⊠No = <b>Not a wetland in a coastal lagoon</b> SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )	
□Yes = Category I □No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
<ul> <li>Grayland-Westport: Lands west of SR 105</li> <li>Ocean Shares Constitution downs to f SR 115 and SR 100</li> </ul>	
— Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
□Yes – Go to SC 6.1 区No = not an interdunal wetland for rating	
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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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?	
Yes = Category II No – Go to SC 6.3	
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?	
Yes = Category III No = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): G Date of site visit:  $\frac{6/28/19}{2}$ Rated by Ryan Krapp & Jacob Layman Trained by Ecology?  $\checkmark$  Yes No Date of training  $\frac{10/18 & 11/19}{2}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	Ι	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>G</u>

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wat	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (n	-	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	2
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	0
Wetland has persistent, ungrazed plants $> 1/10$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the bold	oxes above	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source	ions D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	s in the boxes above	2

**Rating of Landscape Potential** If score is: <u>3 or 4 = H</u>  $\times$  1 or 2 = M <u>0 = L</u> 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit points = 5 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	C
Total for D 4Add the points in the boxes above2	2
Rating of Site Potential If score is:12-16 = H $6-11 = M$ $\times$ 0-5 = LRecord the rating on the fire	irst 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 $0$	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	1
Total for D 5Add the points in the boxes above1	1
Rating of Landscape Potential       If score is:3 = H _ X 1 or 2 = M0 = L       Record the rating on the first of the state of the	irst page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
<ul> <li>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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> </ul> </li> </ul>	2
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	
Total for D 6       Add the points in the boxes above       2         Rating of Value If score is: X 2-4 = H       1 = M       0 = L       Record the rating on the first	

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	le important habitat	=
H 1.0. Does the site have the potential to provide habitat?		
<ul> <li>1.1. Structure of plant community: Indicators are Cowardin classes and st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the Aquatic bed</li> <li>Aquatic bed</li> <li>Emergent</li> <li>Scrub-shrub (areas where shrubs have &gt; 30% cover)</li> <li>Forested (areas where trees have &gt; 30% cover)</li> <li>If the unit has a Forested class, check if:</li> <li>The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon</li> </ul>	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedSeasonally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the su the species. <b>Do not include Eurasian milfoil, reed canarygrass, purj</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
<ul> <li>H 1.4. Interspersion of habitats <ul> <li>Decide from the diagrams below whether interspersion among Cowathe classes and unvegetated areas (can include open water or mudfle have four or more plant classes or three classes and open water, the second sec</li></ul></li></ul>	ats) is high, moderate, low, or none. If you	0

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points</i>.</li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m)</li> <li>Over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</li> <li>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>)</li> <li>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>)</li> <li>Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of</i></li> </ul>	1
strata)	
Total for H 1Add the points in the boxes above	3

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = L** 

Record the rating on the first page

I 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).         Calculate: $0$ % undisturbed habitat + [(% moderate and low intensity land uses) $0$ If total accessible habitat is:	
$^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	0
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
I 2.2. Undisturbed habitat in 1 km Polygon around the wetland.       Calculate: 11.55       % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]       = 22.890000000 %         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1         Undisturbed habitat < 10% of 1 km Polygon	1
I 2.3. Land use intensity in 1 km Polygon: If       > 50% of 1 km Polygon is high intensity land use       points = (- 2)         ≤ 50% of 1 km Polygon is high intensity       points = 0	-2
Total for H 2 Add the points in the boxes above	-1

H 3.0. Is the habitat provided by the site valuable to society?	-
<ul> <li>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.</li> <li>Site meets ANY of the following criteria: points = 2</li> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li>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</li> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> </ul>	0
× Site does not meet any of the criteria above points = 0	
<b>Rating of Value</b> If score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the rating of the rating of the rating of the ratio of th	n the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

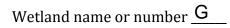
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number  $\underline{G}$ 

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ⊠No= <b>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 = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, see page 25)	
$\square$ 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 = Category I	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4  Imes No = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
<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 (> 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?	
$\Box Yes = Is a Category I bog \Box No = Is not a bog$	

SC 4.0. Forested Wetlands	
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? If you answer YES you will still need to rate	
the wetland based on its functions.	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of</li> </ul>	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
- Mature forests (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).	
□Yes = Category I  ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters have an advantage from the real sector.	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
$\Box Yes - Go to SC 5.1  \boxtimes No = Not a wetland in a coastal lagoon$	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
$\Box Yes = Category I  \Box No = Category II$	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
— Grayland-Westport: Lands west of SR 105	
— Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
□Yes – Go to SC 6.1 区No = not an interdunal wetland for rating	
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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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?	
$\Box Yes = Category II \Box No - Go to SC 6.3$	
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?  Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>H</u>\_\_\_\_\_ Date of site visit: <u>6/28/19</u> Rated by <u>Ryan Krapp & Jacob Layman</u> Trained by Ecology? <u>V</u> Yes <u>No Date of training</u> <u>10/18 & 11/19</u>

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 H

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wa	iter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
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 flowin	points = 3 g outlet. points = 2	2
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (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	0
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants <1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	ooxes above	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of th	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	2

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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			
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	1		
D 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 the unit is found</i> )? Yes = 2 No = 0			
Total for D 3Add the points in the boxes above	3		
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page			

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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:       points = 4         Wetland is a depression or flat depression with no surface water leaving it (no outlet)       points = 4         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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         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	0
Total for D 4Add the points in the boxes above	2
Rating of Site Potential If score is:12-16 = H $6-11 = M$ $\times 0-5 = L$ 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	1
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	1
Total for D 5Add the points in the boxes above	2
Rating of Landscape PotentialIf score is: $3 = H \times 1$ or $2 = M = 0 = L$ Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best matches conditions around the wetland unit being rated</i>. <i>Do not add points</i>. <u>Choose the highest score if more than one condition is met</u>. 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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> </ul> </li> <li>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. <i>Explain why</i> points = 0</li> </ul>	2
There are no problems with flooding downstream of the wetland. points = 0	
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	2

Rating of Value If score is:  $\times 2-4 = H$  \_\_1 = M \_\_0 = L

These questions apply to wetlands		
HABITAT FUNCTIONS - Indicators that site functions to provid H 1.0. Does the site have the potential to provide habitat?	e important habitat	-
H 1.1. Structure of plant community: Indicators are Cowardin classes and sti Cowardin plant classes in the wetland. Up to 10 patches may be comb of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shr	bined for each class to meet the threshold be number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
that each cover 20% within the Forested polygon H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the womore than 10% of the wetland or ¼ ac to count (see text for descriptions) Permanently flooded or inundated Seasonally flooded or inundated X Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland	ons of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least : Different patches of the same species can be combined to meet the si the species. <b>Do not include Eurasian milfoil, reed canarygrass, purp</b> If you counted: > 19 species 5 - 19 species < 5 species	ze threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the r None = 0 points All three diagrams in this row are HIGH = 3points	its) is high, moderate, low, or none. <i>If you</i>	0

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	2

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = L** 

Record the rating on the first page

H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).Calculate: 0% undisturbed habitat + [(% moderate and low intensity land uses) 0/2] = 0% If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygon10-19% of 1 km Polygon< 10% of 1 km Polygonpoints = 1< 10% of 1 km Polygonpoints = 0	0
20-33% of 1 km Polygonpoints = 210-19% of 1 km Polygonpoints = 1	0
10-19% of 1 km Polygon points = 1	Ŭ
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.       Calculate: 11.55       % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]       = 22.8950000000 %         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1         Undisturbed habitat < 10% of 1 km Polygon	1
H 2.3. Land use intensity in 1 km Polygon: If       > 50% of 1 km Polygon is high intensity land use       points = (- 2)         ≤ 50% of 1 km Polygon is high intensity       points = 0	-2
Total for H 2Add the points in the boxes above	-1

H 3.0. Is the habitat provided by the site valuable to society?		
<ul> <li>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the his that applies to the wetland being rated.</li> <li>Site meets ANY of the following criteria:</li> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or f</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resource It has been categorized as an important habitat site in a local or regional comprehensive plan, Shoreline Master Plan, or in a watershed plan</li> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> <li>× Site does not meet any of the criteria above</li> </ul>	points = 2 federal lists) rces	0
<b>Rating of Value</b> If score is: $2 = H$ $1 = M \times 0 = L$ Record	d the rating on	the first page

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

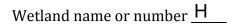
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>H</u>

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt       Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
□Yes = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, 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 = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
$\Box Yes - Contact WNHP/WDNR and go to SC 2.4  \boxtimes No = Not a WHCV$	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to <b>SC 3.3</b> $\blacksquare$ No – Go to <b>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? $\Box$ Yes – Go to SC 3.3 $\blacksquare$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons         Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?         — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks         — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)         □Yes – Go to SC 5.1       ⊠No = Not a wetland in a coastal lagoon         SC 5.1. Does the wetland meet all of the following three conditions?       — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).         — 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 is larger than <sup>1</sup> / <sub>10</sub> ac (4350 ft <sup>2</sup> )	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{I}$  \_\_\_\_\_ Date of site visit:  $\underline{^{6/28/19}}$ Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology?  $\checkmark$  Yes \_\_\_\_ No Date of training  $\underline{^{10/18 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog		Ι
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 |

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wa	ter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
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	points = 3 g outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	0
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2     Add the points	s in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

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 of flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or dich. OR highly constricted permanently flowing outletpoints = 0         2.1. Depth of torace during water leavings. The wetland is a depression (QUESTION 7 on key), whose outlet is a permanently flowing points = 0         2.2. Depth of torace during water leavings. The surface of ponding above the bottom of foutet points = 7 Marks of ponding are 3 for more above the surface or bottom of outlet points = 7 Marks of ponding are 3 for more above the surface or bottom of outlet points = 3 The wetland is a "headwater" wetland       points = 3 Points = 3 Points = 3 Points = 3 Points = 0       0         D 4.3. Contribution of the wetland to storage in the watershed; Estimate the ratio of the area of pushters m basin contributing surface water to the wetland of the area of the unit Points = 5       0         D 4.3. Contribution of the vettand to storage in the watershed; Estimate the ratio of the area of pushters = 5       0         D 4.3. Contribution of the Flast class       points = 5         D total for D 4       Add the points in the boxes above       4         Rating of Site Potential If score is:	DEPRESSIONAL AND FLATS WETLANDS		
D 4.1. Characteristics of surface water outflows from the wetland:       points = 4         Wetland has an intermittently flowing surface water leaving it (no outlet)       points = 1         Wetland has an intermittently flowing surface water leaving it (no outlet)       points = 1         Wetland has an intermittently flowing surface and cills. O B highly constricted permanently flowing points = 0       4         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 or bottom of outlet       points = 7         Marks of ponding are 3 for more above the surface or bottom of outlet       points = 3         Marks are at least 0.5 ft to 2 ft from surface or bottom of outlet       points = 3         Marks of ponding least hor 2 ft from surface or bottom of outlet       points = 1         Marks of ponding least hor 3.5 ft (6) in       metriched: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.       points = 0         D 4.3. Contribution of the wetland to the area of the unit       points = 3       points = 5         The area of the basin is 10 to 100 times the area of the unit       points = 5       points = 6         The area of the basin is 0 to 100 times the area of the unit       points = 6       points = 7         The area of the basin is 10 to 100 times the area of the unit       points = 5       points = 5      <	Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
Wetland is a depression or flat depression with no surface water leaving if (no outlet)       points = 1         Wetland has an intermittently flowing stream or ditch. OR highly constricted permanently flowing outlet points = 0       points = 1         Vetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0       points = 0         0.2. Dept of storage during wet periods: Extimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface or bottom of outlet       points = 7         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 3         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 3         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 3         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 3         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 5         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 5         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 5         Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet       points = 0         D 4.3. Contribution of the wetland to storage in the watershed: Estimate the reatio of the area of upstream basin contributing surface water to the wetland to the area of the unit       points = 5	D 4.0. Does the site have the potential to reduce flooding and erosion?		
with no outlet, measure from the surface of permanent water or if dry, the deepest part.       points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 5         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 3         Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	Wetland is a depression or flat depression with no surface water leaving it (no outlet)points = 4Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditchpoints = 1	4	
contributing surface water to the wetland to the area of the wetland unit itself.       points = 5       0         The area of the basin is lots to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         Total for D 4       Add the points in the boxes above       4         Rating of Site Potential If score is:12-16 = H6-11 = MX_0-5 = L       Record the rating on the first page         D 5.0. Does the wetland receive stormwater discharges?       Yes = 1       No = 0       0         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 covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?       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       1         Rating of Landscape Potential       If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page       0         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       1       2	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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	0	
Rating of Site Potential If score is:12-16 = H6-11 = MX_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?       0         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       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D         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 roted. Do not add points. Choose the description that best matches conditions area. 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):       2         • Flooding problems are in a sub-basin farther down-gradient of unit.       points = 1         The existing or potential cannot reach areas that flood. Explain why points = 0         The existing	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0	0	
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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       1         Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M      0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       0       0       0         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 description that best matches conditions around 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):       2       2         • Flooding problems are in a sub-basin farther down-gradient.       points = 1       2       2         • Surface flooding problems are in a sub-basin.       points = 1       points = 0       2       2         • Flooding or potential outflow from the wetland is so constrained by human or natural conditions that	Rating of Site Potential If score is:       12-16 = H       6-11 = M       × 0-5 = L       Record the rating on the	first page	
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.)?       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = MO = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       2         • Flooding problems are in a sub-basin that is immediately down-gradient of unit. points = 2       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       2         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         The existing or D 6       Add the points in the box	D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	-	
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       2         • Flooding problems are in a sub-basin farther down-gradient of unit.       points = 2       2         • Surface flooding problems are in a sub-basin.       points = 1       points = 1         Flooding form groundwater is an issue in the sub-basin.       points = 1       points = 0         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       0         The existing or potential outflow from the wetland.       points = 0       0         There are no problems with flooding downstream of the wetland.       points = 0	D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0	
>1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1 No = 0       I         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D         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 description that best matches 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       Points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1       Points = 0       Points = 0         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       Points = 0       0         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       2	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	
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D 6.1. <u>The unit is in a landscape that has flooding problems</u> . <i>Choose the description that best matches conditions around the wetland unit being rated. Do not add points</i> . <u>Choose the highest score if more than one condition is met</u> . 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. <i>Explain why</i> points = 0     There are no problems with flooding downstream of the wetland. points = 0     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     Total for D 6	Rating of Landscape Potential If score is:       3 = H       X 1 or 2 = M       0 = L       Record the rating on the	first page	
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):       Points = 2       Points = 2       Points = 1       Points = 0       Points = 1       Points = 1       Points = 1 <td>D 6.0. Are the hydrologic functions provided by the site valuable to society?</td> <td>-</td>	D 6.0. Are the hydrologic functions provided by the site valuable to society?	-	
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Total for D 6Add the points in the boxes above2		0	
		2	

<b>ABITAT FUNCTIONS</b> - Indicators that site functions to provide	e important habitat	
1.0. Does the site have the potential to provide habitat?		-
<ul> <li>1.1. Structure of plant community: Indicators are Cowardin classes and str Cowardin plant classes in the wetland. Up to 10 patches may be comb of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed Emergent Scrub-shrub (areas where shrubs have &gt; 30% cover) Forested (areas where trees have &gt; 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shr that each cover 20% within the Forested polygon</li> </ul>	bined for each class to meet the threshold be number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
1 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the w more than 10% of the wetland or ¼ ac to count ( <i>see text for description</i> Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetla Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland	ons of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
<ul> <li>I 1.3. Richness of plant species</li> <li>Count the number of plant species in the wetland that cover at least 1</li> <li>Different patches of the same species can be combined to meet the size</li> <li>the species. Do not include Eurasian milfoil, reed canarygrass, purp</li> <li>If you counted: &gt; 19 species</li> <li>5 - 19 species</li> </ul>	ze threshold and you do not have to name	1
< 5 species	points = 0	
<ul> <li>A 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowar the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the r None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3points</li></ul>	ts) is high, moderate, low, or none. If you	0

H 1.5. Special habitat features:         Check the habitat features that are present in the wetland. The number of checks is the number of points.        Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).        Standing snags (dbh > 4 in) within the wetland        Undercut banks are present for at least 6.6 ft (2 m) and/or 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)        Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	0
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> 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> )	
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_7-14 = M \_\_\_\_0-6 = L

Record the rating on the first page

-1

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2 If total accessible habitat is:	.] = <u>0   %</u>	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	Ŭ
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.8950000000</u> % points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in th	e boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M< 1 = L Reco	ord the rating on t	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 on	ly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the s</li> </ul>	tate or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natura</li> </ul>	al Resources	
— It has been categorized as an important habitat site in a local or regional comprehensive	/e 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

h

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>|</u>

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type   C	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> No= <b>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? Preserve = Category 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 Spartina, 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 = Category I □ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 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?	
Species (or combination of species) listed in Table 4 provide more than 50% of the cover under the catopy $P$	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons         Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?         — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks         — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)         □Yes – Go to SC 5.1       ⊠No = Not a wetland in a coastal lagoon         SC 5.1. Does the wetland meet all of the following three conditions?       — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).         — 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 is larger than <sup>1</sup> / <sub>10</sub> ac (4350 ft <sup>2</sup> )	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         □Yes = Category I         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number |

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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>J</u> Date of site visit: <u>6/28/19</u> Rated by <u>Ryan Krapp & Jacob Layman</u> Trained by Ecology? <u>V</u> Yes <u>No Date of training</u> <u>10/18 & 11/19</u>

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>J</u>

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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	
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	2
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1 D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (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 > <sup>1</sup> / <sub>10</sub> of area       points = 1         Wetland has persistent, ungrazed plants < <sup>1</sup> / <sub>10</sub> of area       points = 0	0
D 1.4. Characteristics of seasonal ponding or inundation:         This is the area that is ponded for at least 2 months. See description in manual.         Area seasonally ponded is > ½ total area of wetland       points = 4         Area seasonally ponded is > ½ total area of wetland       points = 2         Area seasonally ponded is < ½ total area of wetland	0
Total for D 1     Add the points in the boxes above	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
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? SourceYes = 1 No = 0		0
Total for D 2     Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	
D 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 the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding	and stream degradat	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	ditch points = 1	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	the outlet. For wetlands points = 7 points = 5 points = 3 points = 1 points = 0	0
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit The area of the basin is 10 to 100 times the area of the unit The area of the basin is more than 100 times the area of the unit Entire wetland is in the Flats class	upstream basin points = 5 points = 3 points = 0 points = 5	0
Total for D 4Add the points	in the boxes above	2
Rating of Site Potential If score is: 12-16 = H6-11 = M0-5 = 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 I >1 residence/ac, urban, commercial, agriculture, etc.)?	and uses (residential at Yes = 1 No = 0	1
Total for D 5Add the points	in the boxes above	1
Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L	Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?		-
<ul> <li>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best mathematication that being rated. Do not add points. Choose the highest score if more than one of the wetland captures surface water that would otherwise flow down-gradient into areas a damaged human or natural resources (e.g., houses or salmon redds):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural water stored by the wetland cannot reach areas that flood. Explain why</li></ul>	<u>e condition is met</u> . where flooding has points = 2 points = 1 points = 1	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a region	al flood control plan?	0
	Yes = 2 No = 0	0
Total for D 6Add the points	in the boxes above	2
Rating of Value If score is: X 2-4 = H 1 = M 0 = L	Record the rating on the	first page

These questions apply to wetland	ls of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provi	de 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 a Cowardin plant classes in the wetland. Up to 10 patches may be cor of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, s that each cover 20% within the Forested polygon	nbined for each class to meet the threshold the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descrip Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wet Seasonally flowing stream in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland	tions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at leas Different patches of the same species can be combined to meet the the species. <b>Do not include Eurasian milfoil, reed canarygrass, pu</b> If you counted: > 19 species 5 - 19 species < 5 species	size threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cow the classes and unvegetated areas (can include open water or mudi have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	vardin plants classes (described in H 1.1), or lats) is high, moderate, low, or none. If you	0

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or 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)</li> <li>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)</li> </ul>	0
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> 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> )	
Total for H 1Add the points in the boxes above	2

**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 funct	tions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensi If total accessible habitat is:	ty land uses) 0 /2] = <u>0</u> %	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensi		
Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches	points = 3 points = 2	1
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		_
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	-1
Rating of Landscape Potential If score is: $4-6 = H$ $1-3 = M \times < 1 = L$	Record the ratina on	the first naa

**Rating of Landscape Potential** If score is: 4-6 = H 1-3 = M X < 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 of	nly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
— It provides habitat for Threatened or Endangered species (any plant or animal on the	state or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natur</li> </ul>	al Resources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehens</li> </ul>	ive 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: $2 = H$ $1 = M$ $\times 0 = L$	Record the rating on	the first page

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

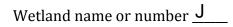
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>J</u>

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type   C	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> No= <b>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? Preserve = Category 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 Spartina, 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 = Category I □ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 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?	
Species (or combination of species) listed in Table 4 provide more than 50% of the cover under the catopy $P$	

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b> <b>the wetland based on its functions.</b>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons         Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?         — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks         — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)         □Yes – Go to SC 5.1       ☑No = Not a wetland in a coastal lagoon         SC 5.1. Does the wetland meet all of the following three conditions?       — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).         — 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 is larger than <sup>1</sup> / <sub>10</sub> ac (4350 ft <sup>2</sup> )	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         □Yes = Category I         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>K</u> Date of site visit:  $\frac{6/28/19}{10^{118 \& 11/19}}$ Rated by Ryan Krapp & Jacob Layman Trained by Ecology? <u>V</u> Yes No Date of training  $\frac{10/18 \& 11/19}{10^{118 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog	I	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>K</u>

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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			
D 1.0. Does the site have the potential to improve water quality?			
D 1.1. Characteristics of surface water outflows from the wetland:			
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	points = 3 g outlet. points = 2	2	
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 = 1 points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0	
D 1.3. Characteristics and distribution of persistent plants (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	0	
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1		
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0		
D 1.4. Characteristics of seasonal ponding or inundation:			
This is the area that is ponded for at least 2 months. See description in manual.			
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0	
Area seasonally ponded is > ¼ total area of wetland	points = 2		
Area seasonally ponded is < ¼ total area of wetland	points = 0		
Total for D 1Add the points in the b	oxes above	2	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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		
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	1	
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		
Total for D 3Add the points in the boxes above	3	
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page		

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding a	ind stream degradat	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing di Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flo	itch points = 1	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	he outlet. For wetlands points = 7 points = 5 points = 3 points = 3 points = 1 points = 0	0
<ul> <li>D 4.3. <u>Contribution of the wetland to storage in the watershed</u>: <i>Estimate the ratio of the area of us contributing surface water to the wetland to the area of the wetland unit itself</i>. The area of the basin is less than 10 times the area of the unit</li> <li>The area of the basin is 10 to 100 times the area of the unit</li> <li>The area of the basin is more than 100 times the area of the unit</li> <li>Entire wetland is in the Flats class</li> </ul>	pstream basin points = 5 points = 3 points = 0 points = 5	0
Total for D 4 Add the points in	n the boxes above	2
Rating of Site Potential If score is: 12-16 = H6-11 = M6-5 = 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 lan >1 residence/ac, urban, commercial, agriculture, etc.)?	nd uses (residential at Yes = 1 No = 0	1
Total for D 5 Add the points in	n the boxes above	1
Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M       0 = L	Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best mate the wetland unit being rated. Do not add points</i>. <u>Choose the highest score if more than one</u> The wetland captures surface water that would otherwise flow down-gradient into areas w damaged human or natural resources (e.g., houses or salmon redds):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin.</li> <li>The existing or potential outflow from the wetland is so constrained by human or natural cowater stored by the wetland cannot reach areas that flood. <i>Explain why</i></li></ul>	<u>condition is met</u> . here flooding has points = 2 points = 1 points = 1	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regiona		0
	Yes = 2 No = 0	
	n the boxes above	2
Rating of Value If score is: $\times 2$ -4 = H1 = M0 = 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.        Aquatic bed       4 structures or more: points = 4        Aquatic bed       3 structures: points = 2        Scrub-shrub (areas where shrubs have > 30% cover)       2 structures: points = 1        Forested (areas where trees have > 30% cover)       1 structure: points = 0         If the unit has a Forested class, check if:      The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)	0
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).        Permanently flooded or inundated       4 or more types present: points = 3        Seasonally flooded or inundated       3 types present: points = 2        X Occasionally flooded or inundated       2 types present: points = 1        X Saturated only       1 type present: points = 0        Permanently flowing stream or river in, or adjacent to, the wetland       2 points = 0        Seasonally flowing stream in, or adjacent to, the wetland       2 points	1
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 5 - 19 species <pre></pre>	1
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points All three diagrams in this row are HIGH = 3points	0

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points</i>.</li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or 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)</li> <li>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)</li> </ul>	0
<ul> <li>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></li> <li>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>)</li> </ul>	
Total for H 1Add the points in the boxes above	2

**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?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> $0$ % undisturbed habitat + [(% moderate and low intensity land uses) $0$ /2] = $0$ % If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	U
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.       Calculate: 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]       = 22.895000000 %         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1         Undisturbed habitat < 10% of 1 km Polygon	1
H 2.3. Land use intensity in 1 km Polygon: If       > 50% of 1 km Polygon is high intensity land use       points = (- 2)         ≤ 50% of 1 km Polygon is high intensity       points = 0	-2
Total for H 2Add the points in the boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L Record the rating on	the first page

H 3.0. Is the habitat provided by the site valuable to society?		<u> </u>
The side valuable to society:		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose or	nly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
— It provides habitat for Threatened or Endangered species (any plant or animal on the species)	state or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natur</li> </ul>	al Resources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensi</li> </ul>	ve 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: $2 = H$ $1 = M$ $\times 0 = L$	Record the rating or	the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

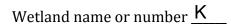
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number K

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ⊠No= <b>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 = Category I No - Go to SC 1.2	
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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I  ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b>	
the wetland based on its functions.	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□ Yes = Category I  ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by conducting gravel banks, chingle, or loss frequently, reaks.	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
□Yes – Go to SC 5.1 区No = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )	
□Yes = Category I □No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	
<ul> <li>— Grayland-Westport: Lands west of SR 103</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
$\Box Yes - Go to SC 6.1  \boxtimes No = not an interdunal wetland for rating$	
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)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
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?	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\_$  \_\_\_\_\_ Date of site visit:  $\frac{6/28/19}{10^{118 \& 11/19}}$ Rated by Ryan Krapp & Jacob Layman \_\_\_\_\_ Trained by Ecology?  $\checkmark$  Yes \_\_\_\_\_ No Date of training  $\frac{10/18 \& 11/19}{10^{118 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II	
Wetland of High Conservation Value	Ι		
Bog		Ι	
Mature Forest	I		
Old Growth Forest	I		
Coastal Lagoon	Ι	II	
Interdunal	I II	III IV	
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>L</u>\_\_\_\_\_

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wa	iter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (		
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 g outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	0
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

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. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4	
<ul> <li>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.</li> <li>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7</li> <li>Marks of ponding between 2 ft to &lt; 3 ft from surface or bottom of outlet points = 5</li> <li>Marks are at least 0.5 ft to &lt; 2 ft from surface or bottom of outlet points = 3</li> <li>The wetland is a "headwater" wetland points = 1</li> <li>Marks of ponding less than 0.5 ft (6 in)</li> </ul>	0	
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit points = 5 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	0	
Total for D 4Add the points in the boxes above	4	
Rating of Site Potential       If score is:       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	1	
Total for D 5Add the points in the boxes above	1	
Rating of Landscape Potential If score is:3 = H3 = H3 = H3 = M0 = L       Record the rating on the	first page	
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-	
<ul> <li>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):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin. points = 1</li> <li>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</li> <li>There are no problems with flooding downstream of the wetland. points</li> </ul>	2	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0	
Yes = 2 No = 0		
Total for D 6     Add the points in the boxes above	2	
<b>Rating of Value</b> If score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the	first page	

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	le 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 st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add t Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedSeasonally flooded or inundatedOccasionally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the sa the species. <b>Do not include Eurasian milfoil, reed canarygrass, pur</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ardin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. If you	0

Wetland name or number <u>L</u>\_\_\_\_

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>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)</li> <li>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>)</li> <li>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>)</li> <li>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>)</li> </ul>	0
Total for H 1Add the points in the boxes above	2

**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?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2 If total accessible habitat is:	2] = <u>0</u> %	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	Ŭ
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.89500000000</u> % points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in the contrast of the contrast o	ne boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L Reco	ord the rating on t	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? <i>Choose only the highest score that applies to the wetland being rated.</i>	
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)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive plan, in a</li> </ul>	
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 ValueIf score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the rating of the state of	n the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number L

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type   C	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> No= <b>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? Preserve = Category 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 Spartina, 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 = Category I □ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 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?	
Species (or combination of species) listed in Table 4 provide more than 50% of the cover under the catopy $P$	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> the wetland based on its functions.	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
canopy with occasional small openings; with at least 8 trees/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.	
— <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).	
□Yes = Category I  ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
<ul> <li>The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> </ul>	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
□Yes – Go to SC 5.1  INo = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— 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.	
mowed grassland. — The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
$\square Yes = Category I \square No = Category II$	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
— Grayland-Westport: Lands west of SR 105	
— Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
□Yes – Go to SC 6.1 区No = not an interdunal wetland for rating	
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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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?	
$\Box Yes = Category II \Box No - Go to SC 6.3$	
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?  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?  Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number L

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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{M}$  \_\_\_\_\_ Date of site visit:  $\underline{^{6/28/19}}$ Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology?  $\checkmark$  Yes \_\_\_\_ No Date of training  $\underline{^{10/18 & 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	Ι	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – go to 4

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

4. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

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 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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	<sup>-</sup> quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no c	-	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing ou	oints = 3 utlet. oints = 2	3
	oints = 1 oints = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4	4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Coward	in classes):	
Wetland has persistent, ungrazed, plants > 95% of area po	oints = 5	
	oints = 3	0
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area points	oints = 1	
Wetland has persistent, ungrazed plants <1/10 of area po	oints = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > ½ total area of wetland po	oints = 4	0
Area seasonally ponded is > ¼ total area of wetland po	oints = 2	
Area seasonally ponded is < ¼ total area of wetland po	oints = 0	
Total for D 1Add the points in the boxe	es above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of th	e site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2       Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1       points = 0	4
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0
Total for D 4Add the points in the boxes above	4
Rating of Site Potential       If score is:       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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential       If score is:3 = H _ X 1 or 2 = M0 = 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	2
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	2
Rating of Value If score is: $X 2-4 = H$ 1 = M0 = LRecord the rating on the	

HABITAT FUNCTIONS - Indicators that site functions to provide important H 1.0. Does the site have the potential to provide habitat?		
H 1.1. Structure of plant community: <i>Indicators are Cowardin classes and strata within t</i> Cowardin plant classes in the wetland. <i>Up to 10 patches may be combined for eac</i> of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number op	th class to meet the threshold f structures checked. tructures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The more than 10% of the wetland or ¼ ac to count ( <i>see text for descriptions of hydro</i>	-	
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 the species. <b>Do not include Eurasian milfoil, reed canarygrass, purple loosestrif</b> If you counted: > 19 species 5 - 19 species < 5 species		
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants of the classes and unvegetated areas (can include open water or mudflats) is high, m have four or more plant classes or three classes and open water, the rating is alwo	lasses (described in H 1.1), or noderate, low, or none. <i>If you</i>	

Total for H 1Add the points in the boxes above	2
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
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>	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	
over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	0
Standing snags (dbh > 4 in) within the wetland 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)	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>	
H 1.5. Special habitat features:	

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = 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?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 / If total accessible habitat is:	2] = <u>0</u> %	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	U
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2 Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.89500000000</u> % points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in t	he boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M $\times$ < 1 = L Rec	ord 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 scor	2
that applies to the wetland being rated.	
Site meets ANY of the following criteria: points = 2	2
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal list	;)
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— 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 = 2	-
× Site does not meet any of the criteria above points = 0	)
Rating of Value If score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the rating	on the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number M

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ■ No= <b>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 = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, 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 = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4  Imes No = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
<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 (> 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?	
$\Box Yes = Is a Category I bog \Box No = Is not a bog$	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
<ul> <li>SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains 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>) □Yes – Go to SC 5.1 ⊠No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — 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 is larger than <sup>1</sup>/<sub>10</sub> ac (4350 ft<sup>2</sup>)</li></ul>	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         □Yes = Category I         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number  $\underline{\mathsf{M}}$ 

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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): N \_\_\_\_\_ Date of site visit: 6/28/19 Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology? Yes \_\_\_\_ No Date of training 10/18 & 11/19

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 N

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wa	iter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
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	points = 3 g outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	0
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2     Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0		
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	1		
D 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 the unit is found</i> )? Yes = 2 No = 0			
Total for D 3Add the points in the boxes above	3		
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page			

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

E

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 has an intermittently flowing approximate and reliably for the outlet of points = 1 Wetland has an inconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0         Q 4.2. Depth of Storage during wet periods; Eximate 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 port. Marks of ponding pets 1 to rore above the surface or bottom of outlet points = 3 Marks of ponding pets to 2 ft from surface or bottom of outlet points = 3 Marks of ponding letween 2 ft to 2 3 ft from surface to bottom of outlet points = 0       0         O 4.3. Contribution of the wetland to storage in the watershed: Estimate the reliably on points = 0 Marks of ponding letween 1 to 2 at from surface or bottom of outlet points = 0       0         O 4.3. Contribution of the wetland to the area of the unit points = 0       0         D 4.3. Contribution of the wetland to the area of the unit points = 0       0         D 5.1. Does the landscape have the potential to support hydrologic functions of the size?       4         D 5.1. Does the unital fis core is:	DEPRESSIONAL AND FLATS WETLANDS	
D 4.1. Characteristics of surface water outflows from the wetland:       points = 4         Wetland has an intermittently flowing surface water leaving it (no outlet)       points = 4         Wetland has an intermittently flowing surface model (C. D. Bighly constricted permanently flowing outletspoints = 2       4         Wetland has an intermittently flowing surface outlet that is permanently flowing outletspoints = 2       4         Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0       0         D 4.2. Depth of storage during wet periods; scientrate the hight of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface or bottom of outlet points = 7       points = 7         Marks of ponding the to 2 at from surface or bottom of outlet points = 3       0         Marks of ponding lests that 0 is fire or a strake or bottom of outlet points = 3       points = 1         Marks of ponding lests than 0.5 ft (is in the watershed: Estimate the ratio of the area of upstream basin contribution of the wetland to bar area of the unit points = 0       0         D 4.3. Contribution of the basin is los than 10 times the area of the unit points = 0       0         The area of the basin is more than 100 times the area of the unit points = 0       0         D 5.1. Does the landscape have the potential to support hydrologic functions of the site?       1         D 5.2. Is > 10% of the contributing basin of the wetland in alma uses that generate scrunoff? Yes = 1 No = 0       0		ion
Wetland is a depression or flat depression with no surface water leaving it (no outlet)       points = 1       4         Wetland has an intermittently flowing stream or ditch. OR highly constricted permanently flowing outlet points = 1       points = 0         D 4.2. Depth of Storage during wet periods; Stimate 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.       Points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 5       O         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 5       O         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 0       O         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 outlit tself.       points = 5         The wetland is a the advetard wetland to the area of the unit       points = 5       O         Post for D 4       Add the points = 5       O         Rating of Site Potential If score is:       12:16 = H	D 4.0. Does the site have the potential to reduce flooding and erosion?	
with no outlet, measure from the surface of permanent water or if dry, the deepest port.       points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 3         Marks of ponding between 2 ft to 3 ft from surface or bottom of outlet       points = 3         The wettand is a "headwater" wettand       points = 3         Wetland is flat but has small depressions on the surface that trap water       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 unit       points = 5         The area of the basin is loss than 10 times the area of the unit       points = 0         Points = 0       points = 0         Points = 5       Total for D 4         Rating of Site Potential If score is:       12-16 = M	Wetland is a depression or flat depression with no surface water leaving it (no outlet)points = 4Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditchpoints = 1	4
contributing surface water to the wetland to the area of the witland unit itself.       points = 5       0         The area of the basin is los to 100 times the area of the unit       points = 5       0         The area of the basin is more than 100 times the area of the unit       points = 0       points = 5         Total for D 4       Add the points in the boxes above       4         Rating of Site Potential If score is:12.16 = H6.11 = M X_0.5 = L       Record the rating on the first page       0         D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       0       0         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.)?       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X l or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       1         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. Choo	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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	0
Rating of Site Potential       If score is:       12-16 = H       6-11 = M       X_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?       0       0         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       1       1         Rating of Landscape Potential       If score is:       3 = H       X_1 or 2 = M       0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       0       0       0         D 1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around 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 from groundwater is an issue in the sub-basin.       points = 1       points = 1       points = 1       points = 1       points	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0	0
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       0         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       1         Total for D 5       Add the points in the boxes above       1       1         Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M	Total for D 4Add the points in the boxes above	4
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       1       1         Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M      0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       0       0       0         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland on its 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):       2       2         •       Flooding problems are in a sub-basin farther down-gradient of unit. points = 1       points = 1       2         •       Surface flooding problems are in a sub-basin. The social 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	Rating of Site Potential If score is:12-16 = H $6-11 = M \times 0-5 = L$ Record the rating on the	first page
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       2         • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2       points = 1         • Surface flooding problems are in a sub-basin farther down-gradient. points = 1       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 0         • 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       points = 0         • D 6.2. Has the site been identified as important for flood storage or flood conveyance	D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	-
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = MO = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       2         • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2       points = 1       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1       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       points = 0         The exist go r potential outflow form the wetland.       points = 0       points = 0       0         The wetland cannot reach areas that flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0       0	D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
>1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1 No = 0       I         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       Image: Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the description that best matches 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):       Pilooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2       Points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1       Points = 1       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       Points = 0         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	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
Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = 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):       Points = 2         • Flooding occurs in a sub-basin that is immediately down-gradient of unit.       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       2         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		1
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> </ul> <ul> <li>points = 0</li> <li>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</li> </ul> <ul> <li>Points = 0</li> /ul>	Total for D 5Add the points in the boxes above	1
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> </ul> <li>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</li> <li>O</li>	Rating of Landscape Potential       If score is:3 = H _ X 1 or 2 = M0 = L       Record the rating on the	first page
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> </ul> <li>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</li> <li>O</li>	D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
There are no problems with flooding downstream of the wetland.       points = 0         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	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 = 1Flooding from groundwater is an issue in the sub-basin.points = 1The existing or potential outflow from the wetland is so constrained by human or natural conditions that the	2
Yes = 2 No = 0		
Total for D 6Add the points in the boxes above2	D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
	Total for D 6Add the points in the boxes above	2

Rating of Value If score is:  $\times 2-4 = H$  \_\_1 = M \_\_0 = L

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	le 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 st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add t Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedSeasonally flooded or inundatedOccasionally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the sa the species. <b>Do not include Eurasian milfoil, reed canarygrass, pur</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ardin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. If you	0

Total for H 1     Add the points in the boxes above	2
permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i> 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> )	
Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or 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) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	0
H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_7-14 = M \_\_\_\_0-6 = L

Record the rating on the first page

- 1

H 2.0. Does the landscape have the potential to support the habitat functions of	f the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land u If total accessible habitat is:	uses) 0 /2] = <u>0</u> %	
> 1/3 (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	Ŭ
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land of Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	uses) $\boxed{22.69}/2$ = $\underbrace{^{22.8950000000}}_{points} = 3$ points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add th	he points in the boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M< 1 = L	Record the rating on t	he 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	he highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state</li> </ul>	e or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Re</li> </ul>	esources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive p</li> </ul>	lan, 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	
<b>Rating of Value</b> If score is: $2 = H$ $1 = M \times 0 = L$ Reference of the score is: $2 = H$ $1 = M \times 0 = L$	cord the rating on	the first page

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# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number N

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
Yes = Category I No - Go to SC 1.2	
SC 1.2. Is the wetland 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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I  ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
<ul> <li>SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains 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>) □Yes – Go to SC 5.1 ⊠No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — 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 is larger than <sup>1</sup>/<sub>10</sub> ac (4350 ft<sup>2</sup>) □Yes = Category I □No = Category II</li></ul>	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         □Yes = Category I         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number N

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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): O Date of site visit:  $\frac{6/28/19}{10^{108 \& 11/19}}$ Rated by Ryan Krapp & Jacob Layman Trained by Ecology? Yes No Date of training  $\frac{10/18 \& 11/19}{10^{108 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 O

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wat	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no	-	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	rdin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
	points = 3	0
	points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the bo	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

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 has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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, messure 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 Marks of ponding are 3 ft or or above the surface or bottom of outlet points = 3 Wetland is flat but has an longen in the waters or if dry, the deepest part. Marks of ponding less than 0.5 ft (6 in) D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream bosin contributing surface water to the wetland to the area of the unit points = 3 D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream bosin contributing surface water to the wetland to the area of the unit points = 5 D 4.3. Contribution of the wetland to thorage in the watershed: Estimate the ratio of the area of upstream bosin contributing surface water to the wetland to support Hydrologic functions of the site? 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 D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at > Y residence/ac, urban, commercial, agriculture, etc.)? The area of the basin is 10 to 100 times the site availad covered with intensive human land uses (residential at > Y residence/ac, urban, commercial, agriculture, etc.)? D 5.1. Does the landscape Potential 1 fsoore is:	DEPRESSIONAL AND FLATS WETLANDS		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression of flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing attempt of the light of points premanently flowing points = 1 Wetland has an intermittently flowing attempt of the light of points premanently flowing points = 0 0 0.2. 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 above the surface or bottom of outlet points = 7 Marks are at least 0.5 ft to < 3 ft from surface or bottom of outlet points = 3 Wetland is a "headwater" wetland is a "headwater" wetland wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding least such 0.5 ft (in) D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstreom bosin contributing surface water to the wetland to the area of the unit points = 5 The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is less than 10 times the area of the unit points = 0 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 D 5.2. Is slow of the area within 150 ft of the wetland in and uses that generate excess runoff? Yes = 1 No = 0 D 5.3. Is more than 25% of the cortibuting basin of the wetland in and uses that generate excess where flow that and uses the straged relian with relians at the sing device water than y down and uses (residential at  > 1 straiged the area when above than 25% of the contributing basin of the wetland in and uses that generate excess runoff? Yes = 1 No = 0 D 5.3. Is more than 25% of the contributing basin of the wetland in and uses that generate excess where flowing around the first page D 5.0. Does the landscape have the p	Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
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with no outlet, measure from the surface of permanent water or if dry, the deepest part.       points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 5         Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditchpoints = 1	4	
contributing surface water to the wetland to the area of the wetland unit itself.       points = 5       0         The area of the basin is lot 0 to 100 times the area of the unit       points = 3       0         The area of the basin is 10 to 100 times the area of the unit       points = 3       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         Total for D 4       Add the points in the boxes above       4         Rating of Site Potential       If score is:12-16 = H      6-11 = M       X0-5 = L       Record the rating on the first page         D 5.1. Does the wetland receive stormwater discharges?       Yes = 1       No = 0       0       0         D 5.2. Is >10% of the area within 150 ft of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1       No = 0       1         Total for D 5       Add the points in the boxes above       1       1         Rating of Landscape Potential       If score is:	Marks of ponding are 3 ft or more above the surface or bottom of outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	0	
Rating of Site Potential If score is:12-16 = H6-11 = MX_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?       0       0         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       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D         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):       2         • Flooding from groundwater is an issue in the sub-basin.       points = 1         The wetsing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the	The area of the basin is less than 10 times the area of the unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0	0	
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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       1       1         Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M      0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       0       0       1         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around 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):       2         •       Flooding problems are in a sub-basin farther down-gradient.       points = 1       2         •       Surface flooding problems are in a sub-basin.       points = 1       2         •       Surface flooding problems are in a sub-basin.       points = 1       2         •       Surface flooding problems are in a sub-basin.       points = 0	Rating of Site Potential If score is:       12-16 = H       6-11 = M       × 0-5 = L       Record the rating on the	first page	
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       2         • Flooding problems are in a sub-basin farther down-gradient. points = 1       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       2         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         There are no problems with flooding downstream of the wetland. <td>D 5.0. Does the landscape have the potential to support hydrologic functions of the site?</td> <td>-</td>	D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	-	
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential       If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D       D         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around 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):       2         • Flooding problems are in a sub-basin farther down-gradient of unit.       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       points = 0         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       2	D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0	
>1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1 No = 0       I         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D         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):       2         • Flooding occurs in a sub-basin that is immediately down-gradient of unit.       points = 2       2         • Surface flooding problems are in a sub-basin.       points = 1       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1       points = 0         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       0         There are no problems with flooding downstream of the wetland.       points = 0       0         There are no problems with flooding downstream of the wetland.       points = 0       0         There are no problems with flooding downstream of the wetland. </td <td>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</td> <td>0</td>	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	
Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M      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       2         Plooding from groundwater is an issue in the sub-basin.       points = 1       points = 1       2         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       points = 0         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       2	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	1	
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> </ul> <ul> <li>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</li> <li>Total for D 6</li> <li>Add the points in the boxes above</li> <li>2</li> </ul>	Total for D 5Add the points in the boxes above	1	
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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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> <li>There are no problems with flooding downstream of the wetland.</li> <li>points = 0</li> <li>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</li> </ul> <li>Total for D 6</li>	D 6.0. Are the hydrologic functions provided by the site valuable to society?	-	
Yes = 2No = 00Total for D 6Add the points in the boxes above2	<ul> <li>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):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin. points = 1</li> <li>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</li> </ul>	2	
Yes = 2       No = 0         Total for D 6       Add the points in the boxes above       2	D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0	
Rating of Value If score is: X 2-4 = H 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.        Aquatic bed       4 structures or more: points = 4        Aquatic bed       3 structures: points = 2        Scrub-shrub (areas where shrubs have > 30% cover)       2 structures: points = 1        Forested (areas where trees have > 30% cover)       1 structure: points = 0         If the unit has a Forested class, check if:      The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)	0
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).        Permanently flooded or inundated       4 or more types present: points = 3        Seasonally flooded or inundated       3 types present: points = 2        X Occasionally flooded or inundated       2 types present: points = 1        X Saturated only       1 type present: points = 0        Permanently flowing stream or river in, or adjacent to, the wetland       2 points = 0        Seasonally flowing stream in, or adjacent to, the wetland       2 points	1
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 5 - 19 species <pre></pre>	1
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points All three diagrams in this row are HIGH = 3points	0

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_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?		Т
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0	/2] = 0 %	
	/2] = <u>0</u> %	
If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69	2] = <u>22.89500000000</u> %	
Undisturbed habitat > 50% of Polygon	points = 3	1
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	1
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	
Fotal for H 2 Add the points in	the boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M $\times$ < 1 = L Re	cord the rating on	the first pag

H 3.0. Is the habitat provided by the site valuable to society?		
<ul> <li>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose that applies to the wetland being rated.</i></li> <li>Site meets ANY of the following criteria:</li> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Nate Shoreline Master Plan, or in a watershed plan</li> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> </ul>	points = 2 e state or federal lists) ural Resources	0
Rating of Value If score is: $2 = H$ $1 = M \times 0 = L$	Record the rating or	the first page

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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.

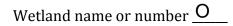
- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number O

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i>	
the wetland based on its functions. — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
canopy with occasional small openings; with at least 8 trees/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.	
<ul> <li>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters have any depression adjacent and the second seco	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 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> ) □Yes – Go to <b>SC 5.1</b> 区No = <b>Not a wetland in a coastal lagoon</b>	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
□Yes = Category I □No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
<b>you answer yes you will still need to rate the wetland based on its habitat functions.</b> In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
<ul> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
□Yes – Go to <b>SC 6.1</b> ⊠No = <b>not an interdunal wetland for rating</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)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II □No – Go to SC 6.3	
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? Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): P \_\_\_\_\_ Date of site visit: 6/28/19 Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology? Yes \_\_\_\_ No Date of training 10/18 & 11/19

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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 P

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 qua	lity
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet	
points : Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points :	3
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowingpointsWetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.points	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No	= 0 0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin cla	sses):
Wetland has persistent, ungrazed, plants > 95% of area points =	= 5
Wetland has persistent, ungrazed, plants > 1/2 of area points =	= 3 0
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area points =	= 1
Wetland has persistent, ungrazed plants <1/10 of area points =	= 0
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area that is ponded for at least 2 months. See description in manual.	
Area seasonally ponded is > ½ total area of wetland points a	= 4 0
Area seasonally ponded is > ¼ total area of wetland points =	= 2
Area seasonally ponded is < ¼ total area of wetland points :	= 0
Total for D 1Add the points in the boxes abore	ve 3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion	
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         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4	
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0	
Total for D 4Add the points in the boxes above	4	
Rating of Site Potential If score is:12-16 = H $6-11 = M \times 0-5 = L$ 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	
	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 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?Yes = 1No = 0D 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 = 1No = 0		
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at	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 1 1	
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         Total for D 5       Add the points in the boxes above	0 1 1	
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         Total for D 5       Add the points in the boxes above         Rating of Landscape Potential If score is:3 = H _X_1 or 2 = M0 = L       Record the rating on the	0 1 1	
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         Total for D 5       Add the points in the boxes above         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the         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	0 1 1 first page	
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         Total for D 5       Add the points in the boxes above         Rating of Landscape Potential If score is:3 = H _X_1 or 2 = M0 = L       Record the rating on the         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	0 1 1 first page	
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         Total for D 5       Add the points in the boxes above         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the         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         D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0 1 1 first page	

Rating of Value If score is:  $\times 2-4 = H$  \_\_1 = M \_\_0 = L

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	le 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 st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add t Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedSeasonally flooded or inundatedOccasionally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the sa the species. <b>Do not include Eurasian milfoil, reed canarygrass, pur</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ardin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. If you	0

Wetland name or number  $\underline{P}$ 

<ul> <li>H 1.5. Special habitat features:</li> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m)</li> <li>Over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</li> <li>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>)</li> <li>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>)</li> <li>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>)</li> </ul>	0
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_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?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: $0$ % undisturbed habitat + [(% moderate and low intensity land uses) $0$ /2] = $0$ % If total accessible habitat is:	
> 1/3 (33.3%) of 1 km Polygon       points = 3         20-33% of 1 km Polygon       points = 2         10-19% of 1 km Polygon       points = 1	0
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.         Calculate: 11.55       % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1         Undisturbed habitat < 10% of 1 km Polygon	1
H 2.3. Land use intensity in 1 km Polygon: If       > 50% of 1 km Polygon is high intensity land use       points = (- 2)         ≤ 50% of 1 km Polygon is high intensity       points = 0	-2
Total for H 2Add the points in the boxes above	-1
<b>Rating of Landscape Potential</b> If score is: $4-6 = H$ $1-3 = M$ $\times < 1 = L$ 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? <i>Choose only the highest score that applies to the wetland being rated.</i> 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	0
<b>Rating of Value</b> If score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the rating on	the first page

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

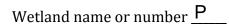
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number P

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt       Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	
□Yes = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, 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 = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
$\Box Yes - Contact WNHP/WDNR and go to SC 2.4  \boxtimes No = Not a WHCV$	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to <b>SC 3.3</b> $\boxtimes$ No – Go to <b>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? $\Box$ Yes – Go to SC 3.3 $\blacksquare$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? If you answer YES you will still need to rate	
the wetland based on its functions.	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of</li> </ul>	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
— Mature forests (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).	
□Yes = Category I  ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
$\Box Yes - Go to SC 5.1  \Box No = Not a wetland in a coastal lagoon$	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103	
<ul> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
$\Box$ Yes – Go to SC 6.1 $\boxtimes$ No = not an interdunal wetland for rating	
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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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?	
□Yes = Category II □No – Go to SC 6.3	
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?	
Yes = Category III No = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): QDate of site visit:  $\frac{6/28/19}{10^{108 \& 11/19}}$ Rated by Ryan Krapp & Jacob LaymanTrained by Ecology?  $\checkmark$  Yes \_\_\_\_\_No Date of training  $\frac{10/18 \& 11/19}{10^{108 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>Q</u>

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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			
D 1.0. Does the site have the potential to improve water quality?			
D 1.1. Characteristics of surface water outflows from the wetland:			
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 flowin	points = 3 g outlet. points = 2	3	
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 = 1 points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0	
D 1.3. Characteristics and distribution of persistent plants (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	0	
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1		
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0		
D 1.4. Characteristics of seasonal ponding or inundation:			
This is the area that is ponded for at least 2 months. See description in manual.			
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0	
Area seasonally ponded is > ¼ total area of wetland	points = 2		
Area seasonally ponded is < ¼ total area of wetland	points = 0		
Total for D 1Add the points in the b	oxes above	3	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: <u>3 or 4 = H</u>  $\times$  1 or 2 = M <u>0 = L</u> 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	0	
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	1	
D 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 the unit is found</i> )? Yes = 2 No = 0		
Total for D 3Add the points in the boxes above	3	
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page		

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression of flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing atternation of the O. M highly constricted permanently flowing outletpoints = 2 Wetland has an intermittently flowing atternation of the O. M highly constricted 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 ato S 1 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 3 ft from surface or bottom of outlet points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding least small depressions on the surface that trap water points = 0 D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the orea of upstream bosin 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 = 3 The area of the basin is nore than 100 times the area of the unit points = 3 The area of the basin is less than 10 times the area of the unit points = 3 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 D 5.2. Is solve of the area within 150 ft of the wetland in and uses that generate excess runoff? Yes = 1 No = 0 D 5.3. Is more than 25% of the cortibuting basin of the wetland covered with intensive human land uses (residential at >1 starged flandscape Potential If score is:	DEPRESSIONAL AND FLATS WETLANDS	
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression of flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing attempt of the light of points premanently flowing points = 1 Wetland has an intermittently flowing attempt of the light of points premanently flowing points = 0 0 0.2. 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 above the surface or bottom of outlet points = 7 Marks are at least 0.5 ft to < 3 ft from surface or bottom of outlet points = 3 Wetland is a "headwater" wetland is a "headwater" wetland wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding least stim 0.5 ft (in) D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstreom bosin contributing surface water to the wetland to the area of the unit points = 5 The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is less than 10 times the area of the unit points = 0 D 5.0. Does the landscape have the potential to support hydrologic functions of the stir? D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 D 5.2. Is show of the area within 150 ft of the wetland in and uses that generate excess runoff? Yes = 1 No = 0 D 5.3. Is more than 25% of the cortibuting basin of the wetland in and uses that generate excess where flow that and uses the stragend the trains or the rating on the first page D 5.0. Does the landscape have the potential to support hydrologic functions of the strage on the first page D 5.1. The unit is a landscape that has flowed by the site valuable to society? D 5.2. Is show of the caretial fiscore is:	Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
Wetland is a depression of flat depression with no surface water leaving it (no outlet)       points = 1         Wetland has an intermittently flowing stream or ditch. OR highly constricted permanently flowing outletpoints = 1       Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0         0 4.0       2.0       Destin de formage during wet periods; stream ter he hight 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.       Narks of ponding between 21 to < 31 from surface or bottom of outlet	D 4.0. Does the site have the potential to reduce flooding and erosion?	
with no outlet, measure from the surface of permanent water or if dry, the deepest part.       points = 7         Marks of ponding are 3 ft or more above the surface or bottom of outlet       points = 5         Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditchpoints = 1	4
contributing surface water to the wetland to the area of the wetland unit itself.       points = 5       0         The area of the basin is lot 0 to 100 times the area of the unit       points = 3       0         The area of the basin is 10 to 100 times the area of the unit       points = 3       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         The area of the basin is 10 to 100 times the area of the unit       points = 5       0         Total for D 4       Add the points in the bases above       4         Rating of Site Potential       If score is:12-16 = H      6-11 = M       X0-5 = L       Record the rating on the first page         D 5.1. Does the wetland receive stormwater discharges?       Yes = 1       No = 0       0       0         D 5.2. Is >10% of the area within 150 ft of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1       No = 0       1         Total for D 5       Add the points in the boxes above       1       1         Rating of Landscape Potential       If score is:	Marks of ponding are 3 ft or more above the surface or bottom of outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	0
Rating of Site Potential If score is:12-16 = H6-11 = MX_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?       0       0         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       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D         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):       2         • Flooding from groundwater is an issue in the sub-basin.       points = 1         The wetsing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the	The area of the basin is less than 10 times the area of the unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0	0
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?       Ves = 1 No = 0       0         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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches condition is met. 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):       2         • Flooding problems are in a sub-basin that is immediately down-gradient of unit.       points = 1       2         • Surface flooding problems are in a sub-basin.       points = 1       2         • Flooding from groundwater is an issue in the sub-basin.       points = 0       2 <t< td=""><td>Total for D 4Add the points in the boxes above</td><td>4</td></t<>	Total for D 4Add the points in the boxes above	4
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       1       1         Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M      0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0       0       0       1         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around 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):       2         •       Flooding problems are in a sub-basin farther down-gradient.       points = 1       2         •       Surface flooding problems are in a sub-basin.       points = 1       2         •       Surface flooding problems are in a sub-basin.       points = 1       2         •       Surface flooding problems are in a sub-basin.       points = 0	Rating of Site Potential If score is:       12-16 = H       6-11 = M       × 0-5 = L       Record the rating on the	first page
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       0         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):       2         • Flooding problems are in a sub-basin farther down-gradient. points = 1       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       2         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         There are no problems with flooding downstream of the wetland. <td>D 5.0. Does the landscape have the potential to support hydrologic functions of the site?</td> <td>-</td>	D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	-
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       1         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential       If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D       D         D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around 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):       2         • Flooding problems are in a sub-basin farther down-gradient of unit.       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       points = 0         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       2	D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
>1 residence/ac, urban, commercial, agriculture, etc.)?       Yes = 1 No = 0       I         Total for D 5       Add the points in the boxes above       1         Rating of Landscape Potential If score is:3 = H X_1 or 2 = M0 = L       Record the rating on the first page         D 6.0. Are the hydrologic functions provided by the site valuable to society?       D         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):       2         • Flooding problems are in a sub-basin farther down-gradient of unit.       points = 2       2         • Surface flooding problems are in a sub-basin.       points = 1       points = 1         Flooding from groundwater is an issue in the sub-basin.       points = 1       points = 0         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       0         There are no problems with flooding downstream of the wetland.       points = 0       0         The are 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	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
Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M      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       2         Plooding from groundwater is an issue in the sub-basin.       points = 1       points = 1       2         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       points = 0         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       2	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	1
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> </ul> <ul> <li>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</li> <li>Total for D 6</li> <li>Add the points in the boxes above</li> <li>2</li> </ul>	Total for D 5Add the points in the boxes above	1
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> <li>There are no problems with flooding downstream of the wetland.</li> <li>points = 0</li> <li>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</li> </ul> <li>Total for D 6</li>	Rating of Landscape PotentialIf score is: $3 = H \times 1$ or $2 = M = 0 = L$ Record the rating on the	first page
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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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</li> <li>There are no problems with flooding downstream of the wetland.</li> <li>points = 0</li> <li>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</li> </ul> <li>Total for D 6</li>	D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
Yes = 2No = 00Total for D 6Add the points in the boxes above2	<ul> <li>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):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin. points = 1</li> <li>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</li> </ul>	2
Yes = 2       No = 0         Total for D 6       Add the points in the boxes above       2	D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Rating of Value If score is: X 2-4 = H 1 = M 0 = L Record the rating on the first page		

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	le important habitat	=
H 1.0. Does the site have the potential to provide habitat?		
<ul> <li>1.1. Structure of plant community: Indicators are Cowardin classes and st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the Aquatic bed</li> <li>Aquatic bed</li> <li>Emergent</li> <li>Scrub-shrub (areas where shrubs have &gt; 30% cover)</li> <li>Forested (areas where trees have &gt; 30% cover)</li> <li>If the unit has a Forested class, check if:</li> <li>The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon</li> </ul>	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedSeasonally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the su the species. <b>Do not include Eurasian milfoil, reed canarygrass, purj</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
<ul> <li>H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowathe classes and unvegetated areas (can include open water or mudfle have four or more plant classes or three classes and open water, the second se</li></ul>	ats) is high, moderate, low, or none. If you	0

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)Standing snags (dbh > 4 in) within the wetlandUndercut 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)Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present ( <i>cut shrubs or trees that have not yet weathered where wood is exposed</i> )	0
<ul> <li>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></li> <li>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>)</li> </ul>	
Total for H 1Add the points in the boxes above	2

**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?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2 If total accessible habitat is:	.] = <u>0   %</u>	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	Ŭ
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.8950000000</u> % points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in th	e boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M< 1 = L Reco	ord the rating on t	the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<ul> <li>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.</li> <li>Site meets ANY of the following criteria:</li> </ul>	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li>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</li> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> </ul>	0
× 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 of the starting	n the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

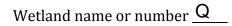
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number **Q** 

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ⊠No= <b>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 = Category I No - Go to SC 1.2	
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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I  ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i>	
the wetland based on its functions. — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
canopy with occasional small openings; with at least 8 trees/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.	
<ul> <li>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters have see discussed backs are backed on the second secon	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 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> ) □Yes – Go to <b>SC 5.1</b> 区No = <b>Not a wetland in a coastal lagoon</b>	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
□Yes = Category I □No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
<b>you answer yes you will still need to rate the wetland based on its habitat functions.</b> In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
<ul> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
□Yes – Go to <b>SC 6.1</b> ⊠No = <b>not an interdunal wetland for rating</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)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II □No – Go to SC 6.3	
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? Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>R</u>\_\_\_\_\_ Date of site visit: <u>6/28/19</u> Rated by <u>Ryan Krapp & Jacob Layman</u> Trained by Ecology? <u>V</u> Yes <u>No Date of training</u> <u>10/18 & 11/19</u>

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** []] (based on functions  $\checkmark$  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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	Μ	L	
Value	Н	Н	М	TOTAL
Score Based on Ratings	6	6	4	16

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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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  $\underline{\mathsf{R}}$ 

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wat	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (n	-	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	2
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	0
Wetland has persistent, ungrazed plants $> 1/10$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the bo	oxes above	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0	
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	1	
D 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 the unit is found</i> )? Yes = 2 No = 0		
Total for D 3Add the points in the boxes above	3	
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page		

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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:       points = 4         Wetland is a depression or flat depression with no surface water leaving it (no outlet)       points = 4         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0
Total for D 4Add the points in the boxes above	2
Rating of Site Potential If score is:12-16 = H $6-11 = M$ $\times$ 0-5 = LRecord 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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential If score is:       3 = H × 1 or 2 = M 0 = L       Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
<ul> <li>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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> <li>There are no problems with flooding downstream of the wetland.</li> </ul> </li> </ul>	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 No = 0	
Total for D 6     Add the points in the boxes above	2
<b>Rating of Value</b> If score is: $\times 2$ -4 = H1 = M0 = L	jirst page

These questions apply to wetlands	s of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	le 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 st Cowardin plant classes in the wetland. Up to 10 patches may be com of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add t Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sh that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the more than 10% of the wetland or ¼ ac to count (see text for descriptingPermanently flooded or inundatedSeasonally flooded or inundatedOccasionally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least Different patches of the same species can be combined to meet the sa the species. <b>Do not include Eurasian milfoil, reed canarygrass, pur</b> If you counted: > 19 species 5 - 19 species < 5 species	ize threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the None = 0 points All three diagrams in this row are HIGH = 3points	ardin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. If you	0

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points</i>.</li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or 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)</li> <li>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)</li> </ul>	1
<ul> <li>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></li> <li>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>)</li> </ul>	
Total for H 1Add the points in the boxes above	3

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_7-14 = M \_\_\_\_70-6 = 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?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2 If total accessible habitat is:	.] = <u>0   %</u>	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	Ŭ
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.8950000000</u> % points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in th	e boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = M< 1 = L Reco	ord the rating on t	the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<ul> <li>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></li> <li>Site meets ANY of the following criteria: points = 2</li> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li>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</li> <li>× Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> <li>points = 0</li> </ul>	1
Rating of Value If score is: $2 = H$ $\times 1 = M$ $0 = L$ Record the rating of Value If score is:	n the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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*).
- **Kiparian**: 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.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number R

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ⊠No= <b>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 = Category I No - Go to SC 1.2	
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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I  ☑No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV	
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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i>	
the wetland based on its functions. — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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.	
— Mature forests (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).	
□Yes = Category I	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters have a depression adjacent to marine waters that is wholly or partially separated from the second	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks The lagoon in which the wetland is located contains pended water that is saling or brackish (> 0.5 ppt)	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
$\Box Yes - Go to SC 5.1  \Box No = Not a wetland in a coastal lagoon$	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mouved grassland	
mowed grassland. — The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
— The wetland is larger than $f_{10}$ ac (4350 ft ) $\Box Yes = Category I  \Box No = Category II$	
	<u> </u>
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
— Long Beach Peninsula: Lands west of SR 103	
— Grayland-Westport: Lands west of SR 105	
— Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
□Yes – Go to SC 6.1  Imes No = not an interdunal wetland for rating	
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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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? ☐Yes = Category II ☐No – Go to SC 6.3	
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?	
Yes = Category III	
	<u> </u>
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number  $\underline{R}$ 

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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>S</u> Date of site visit:  $\frac{6/28/19}{10^{18 \& 11/19}}$ Rated by Ryan Krapp & Jacob Layman Trained by Ecology?  $\checkmark$  Yes No Date of training  $\frac{10/18 \& 11/19}{10^{10} \& 11/19}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** []] (based on functions  $\checkmark$  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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	Μ	L	
Value	Н	Н	М	TOTAL
Score Based on Ratings	6	6	4	16

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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 <u>S</u>

- NO − go to 6 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wat	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no	-	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	rdin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
	points = 3	0
	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the bo	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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:       points = 4         Wetland is a depression or flat depression with no surface water leaving it (no outlet)       points = 4         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0
Total for D 4Add the points in the boxes above	4
Rating of Site Potential If score is:12-16 = H $6-11 = M \times 0-5 = L$ 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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential       If score is:3 = H _ X 1 or 2 = M0 = 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	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 No = 0	
Total for D 6     Add the points in the boxes above	2
Rating of Value If score is: $\times 2-4 = H$ 1 = M0 = L Record the rating on the	first page

These questions apply to wetlands	of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	e 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 sta Cowardin plant classes in the wetland. Up to 10 patches may be come of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sho that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the women than 10% of the wetland or ¼ ac to count (see text for description	ons of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least : Different patches of the same species can be combined to meet the si the species. <b>Do not include Eurasian milfoil, reed canarygrass, purp</b> If you counted: > 19 species 5 - 19 species < 5 species	ze threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the r None = 0 points All three diagrams in this row are HIGH = 3points	rdin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. <i>If you</i>	0

<ul> <li>over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</li> <li>Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)</li> <li>At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are</li> </ul>	1
permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_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?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 % If total accessible habitat is:	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	Ũ
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] = 22.895000000 % points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity Total for U.2.	-2
Total for H 2   Add the points in the boxes above	
<b>Rating of Landscape Potential</b> If score is:4-6 = H1-3 = M $\times$ < 1 = L Record the rating or	n the first page

H 3.0. Is the habitat provided by the site valuable to society?	-
<ul> <li>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></li> <li>Site meets ANY of the following criteria: points = 2</li> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li>It has been categorized as an important habitat site in a local or regional comprehensive plan, in a</li> </ul>	1
Shoreline Master Plan, or in a watershed plan <ul> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> <li>Site does not meet any of the criteria above</li> <li>points = 0</li> </ul>	
Rating of ValueIf score is: $2 = H \times 1 = M = 0 = L$ Record the rating on	the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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*).
- **Kiparian**: 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.

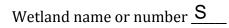
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>S</u>

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ⊠No= <b>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 = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, see page 25)	
$\square$ 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 = Category I	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4  Imes No = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
<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 (> 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?	
$\Box Yes = Is a Category I bog \Box No = Is not a bog$	

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b>	
the wetland based on its functions.	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□ Yes = Category I  ⊠No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by conducting gravel banks, chingle, or loss frequently, reaks.	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
□Yes – Go to SC 5.1 区No = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )	
□Yes = Category I □No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	
<ul> <li>— Grayland-Westport: Lands west of SR 103</li> <li>— Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
$\Box Yes - Go to SC 6.1  \boxtimes No = not an interdunal wetland for rating$	
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)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
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?	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{\mathsf{T}}$  Date of site visit:  $\underline{^{6/28/19}}$ Rated by Ryan Krapp & Jacob Layman Trained by Ecology?  $\checkmark$  Yes No Date of training  $\underline{^{10/18 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L

3 = L,L,L

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

CHARACTERISTIC	CATEGORY	
Estuarine	Ι	II
Wetland of High Conservation Value	I	
Bog		Ι
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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  $\underline{\mathsf{T}}$ 

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
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 flowin	points = 3 g outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (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	0
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > ½ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of th	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2     Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0		
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	1		
D 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 the unit is found</i> )? Yes = 2 No = 0			
Total for D 3Add the points in the boxes above	3		
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page			

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
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:       points = 4         Wetland is a depression or flat depression with no surface water leaving it (no outlet)       points = 4         Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0
Total for D 4Add the points in the boxes above	4
Rating of Site Potential If score is:12-16 = H $6-11 = M$ $\times$ 0-5 = LRecord 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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential If score is:       3 = H       X 1 or 2 = M       0 = L       Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
<ul> <li>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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> <li>There are no problems with flooding downstream of the wetland.</li> </ul> </li> </ul>	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 No = 0	-
Total for D 6     Add the points in the boxes above	2
<b>Rating of Value</b> If score is: $\times 2-4 = H$ $\_1 = M$ $\_0 = L$ Record the rating on the	jirst page

These questions apply to wetlands of all HGM	classes.
<b>HABITAT FUNCTIONS</b> - 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 Cowardin plant classes in the wetland. Up to 10 patches may be combined for each of of % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of st Aquatic bed 4 stru Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceory that each cover 20% within the Forested polygon	class to meet the threshold ructures checked. ctures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0 0
H 1.2. Hydroperiods	
Check the types of water regimes (hydroperiods) present within the wetland. The wetland or ¼ ac to count (see text for descriptions of hydroperelPermanently flooded or inundatedSeasonally flooded or inundated	
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 the species. <b>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife,</b> If you counted: > 19 species 5 - 19 species < 5 species	-
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants class the classes and unvegetated areas (can include open water or mudflats) is high, mod have four or more plant classes or three classes and open water, the rating is always None = 0 points Low = 1 point Mathematical classes are HIGH = 3points	lerate, low, or none. <i>If you</i>

Wetland name or number <u>T</u>

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>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)</li> <li>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>)</li> <li>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>)</li> <li>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>)</li> </ul>	0
Total for H 1Add the points in the boxes above	1

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_7-14 = M \_\_\_\_0-6 = L

Record the rating on the first page

2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 %	
If total accessible habitat is:	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	Ŭ
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
<ul> <li>2.2. Undisturbed habitat in 1 km Polygon around the wetland.</li> <li>Calculate: 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2] = 22.859000009 %</li> <li>Undisturbed habitat &gt; 50% of Polygon</li> <li>Undisturbed habitat 10-50% and in 1-3 patches</li> <li>Undisturbed habitat 10-50% and &gt; 3 patches</li> <li>Undisturbed habitat &lt; 10% of 1 km Polygon</li> </ul>	1
2.3. Land use intensity in 1 km Polygon: Ifpoints = (- 2) $\leq 50\%$ of 1 km Polygon is high intensitypoints = (- 2) $\leq 50\%$ of 1 km Polygon is high intensitypoints = 0	-2
otal for H 2 Add the points in the boxes above	-1

	-	
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 hig	ghest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or fermion</li> </ul>	ederal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resource</li> </ul>	ces	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in	n 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: $2 = H$ $1 = M \times 0 = L$ Record	the rating on	the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

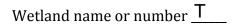
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number <u>T</u>

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type   C	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> No= <b>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? Preserve = Category 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 Spartina, 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 = Category I □ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 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?	
Species (or combination of species) listed in Table 4 provide more than 50% of the cover under the catopy $P$	

SC 4.0. Forested Wetlands	
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? If you answer YES you will still need to rate	
the wetland based on its functions.	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of</li> </ul>	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
— Mature forests (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).	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
$\Box Yes - Go to SC 5.1  \Box No = Not a wetland in a coastal lagoon$	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— 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 wetlend is larger than $\frac{1}{2}$ (4250 $t^2$ )	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> ) $\Box$ Yes = <b>Category I</b> $\Box$ No = <b>Category I</b>	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
— Grayland-Westport: Lands west of SR 105	
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
□Yes – Go to SC 6.1 区No = not an interdunal wetland for rating	
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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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?	
Yes = Category II On - Go to SC 6.3	
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? Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

 Name of wetland (or ID #): U
 Date of site visit: 6/28/19

 Rated by Ryan Krapp & Jacob Layman
 Trained by Ecology? Yes No Date of training 10/18 & 11/19

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value	Ι	
Bog		Ι
Mature Forest	I	
Old Growth Forest	Ι	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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 U

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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	r quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no o	outlet).	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing ou	oints = 3 utlet. oints = 2	3
	oints = 1 oints = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes =	4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Coward	lin classes):	
Wetland has persistent, ungrazed, plants > 95% of area po	oints = 5	
	oints = 3	0
Wetland has persistent, ungrazed plants > <sup>1</sup> / <sub>10</sub> of area points	oints = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area p	oints = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > 1/2 total area of wetland po	oints = 4	0
Area seasonally ponded is > ¼ total area of wetland po	oints = 2	
Area seasonally ponded is < ¼ total area of wetland p	oints = 0	
Total for D 1Add the points in the boxe	es above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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 N	10 = 0 0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1	lo = 0 1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1	1o = 0 0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2. Source Yes = 1 N	
Total for D 2Add the points in the boxes a	above 1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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		
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	1	
D 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 the unit is found</i> )? Yes = 2 No = 0		
Total for D 3Add the points in the boxes above	3	
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page		

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

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. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing d Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flow	litch points = 1	4
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of to 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	he outlet. For wetlands points = 7 points = 5 points = 3 points = 1 points = 0	0
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of a contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit The area of the basin is 10 to 100 times the area of the unit The area of the basin is more than 100 times the area of the unit Entire wetland is in the Flats class	upstream basin points = 5 points = 3 points = 0 points = 5	0
Total for D 4Add the points	in the boxes above	4
Rating of Site Potential If score is: 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	P	-
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 la >1 residence/ac, urban, commercial, agriculture, etc.)?	and uses (residential at Yes = 1 No = 0	1
Total for D 5Add the points	in the boxes above	1
Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L	Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?		-
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best mat the wetland unit being rated</i>. <i>Do not add points</i>. <i>Choose the highest score if more than one</i>. The wetland captures surface water that would otherwise flow down-gradient into areas w damaged human or natural resources (e.g., houses or salmon redds):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural c water stored by the wetland cannot reach areas that flood. <i>Explain why</i></li></ul>	<u>e condition is met</u> . where flooding has points = 2 points = 1 points = 1 onditions that the	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regiona		0
	Yes = 2 No = 0	
	in the boxes above	2
Rating of Value If score is: $\times 2$ -4 = H1 = M0 = L	Record the rating on the	first page

These questions apply to wetlands	of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provid	e 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 sta Cowardin plant classes in the wetland. Up to 10 patches may be come of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, sho that each cover 20% within the Forested polygon	bined for each class to meet the threshold he number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the women than 10% of the wetland or ¼ ac to count (see text for descriptionPermanently flooded or inundatedOccasionally flooded or inundatedOccasionally flooded or inundatedSaturated onlyPermanently flowing stream or river in, or adjacent to, the wetlanSeasonally flowing stream in, or adjacent to, the wetlandSeasonally flowing stream in, or adjacent to, the wetland	ons of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	0
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least : Different patches of the same species can be combined to meet the si the species. <b>Do not include Eurasian milfoil, reed canarygrass, purp</b> If you counted: > 19 species 5 - 19 species < 5 species	ze threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowa the classes and unvegetated areas (can include open water or mudfla have four or more plant classes or three classes and open water, the r None = 0 points All three diagrams in this row are HIGH = 3points	rdin plants classes (described in H 1.1), or ats) is high, moderate, low, or none. <i>If you</i>	0

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
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>	
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> )	
Total for H 1Add the points in the boxes above	1

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = 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?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: $0$ % undisturbed habitat + [(% moderate and low intensity land uses) $0$ /2] = $0$ % If total accessible habitat is:	
> 1/3 (33.3%) of 1 km Polygon       points = 3         20-33% of 1 km Polygon       points = 2         10-19% of 1 km Polygon       points = 1	0
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.         Calculate: 11.55       % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1         Undisturbed habitat < 10% of 1 km Polygon	1
H 2.3. Land use intensity in 1 km Polygon: If       > 50% of 1 km Polygon is high intensity land use       points = (- 2)         ≤ 50% of 1 km Polygon is high intensity       points = 0	-2
Total for H 2Add the points in the boxes above	-1
<b>Rating of Landscape Potential</b> If score is: $4-6 = H$ $1-3 = M$ $\times < 1 = L$ 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	y the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the statement of the statement</li></ul>	ate or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural</li> </ul>	Resources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive</li> </ul>	e 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: $2 = H$ $1 = M \times 0 = L$	Record the rating on	the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

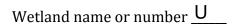
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number U

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type   C	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> No= <b>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? Preserve = Category 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 Spartina, 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 = Category I □ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 INO = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 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?	
Species (or combination of species) listed in Table 4 provide more than 50% of the cover under the catopy $P$	

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b>	
the wetland based on its functions.	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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.	
<ul> <li>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons	
<ul> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)</li> <li>Yes – Go to SC 5.1 XNo = Not a wetland in a coastal lagoon</li> </ul>	
<ul> <li>SC 5.1. Does the wetland meet all of the following three conditions?</li> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</li> </ul>	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> ) $\Box$ Yes = <b>Category I</b> $\Box$ No = <b>Category II</b>	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 — Yes – Go to SC 6.1 ⊠No = not an interdunal wetland for rating	
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)?	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II □No – Go to SC 6.3	
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? Yes = Category III INO = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): V \_\_\_\_\_ Date of site visit:  $\frac{6/28/19}{10^{118 \& 11/19}}$ Rated by Ryan Krapp & Jacob Layman \_\_\_\_ Trained by Ecology?  $\checkmark$  Yes \_\_\_\_ No Date of training  $\frac{10/18 \& 11/19}{10^{118 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value		Ι
Bog		Ι
Mature Forest		Ι
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	Н 1.1, Н 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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  $\underline{V}$ 

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wate	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
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 c	points = 3 outlet. points = 2	3
	points = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes =	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowar	din classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	0
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants <1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the box	xes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
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? SourceYes = 1 No = 0	0
Total for D 2Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or  $4 = H \times 1$  or 2 = M = 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	n
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	1
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	)
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 0 The area of the basin is more than 100 times the area of the unit points = 5 The area of the basin is more than 100 times the area of the unit points = 5	)
Total for D 4Add the points in the boxes above4	1
Rating of Site Potential If score is:12-16 = H $6-11 = M \times 0-5 = L$ Record the rating on the first	rst 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	1
Total for D 5Add the points in the boxes above1	l
Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M       0 = L       Record the rating on the first	rst 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	2
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	
Total for D 6       Add the points in the boxes above       2         Rating of Value If score is: X 2-4 = H       1 = M       0 = L       Record the rating on the first	

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.        Aquatic bed       4 structures or more: points = 4        Aquatic bed       3 structures: points = 2        Scrub-shrub (areas where shrubs have > 30% cover)       2 structures: points = 1        Forested (areas where trees have > 30% cover)       1 structure: points = 0         If the unit has a Forested class, check if:      The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)	0
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).	1
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         5 - 19 species       points = 1         < 5 species	1
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points All three diagrams in this row are <b>HIGH</b> = 3points	0

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
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>	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	2

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = 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?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2 If total accessible habitat is:	2] = <u>0</u> %	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	Ŭ
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.89500000000</u> % points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in the contrast of the contrast o	ne boxes above	-1
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L Reco	ord the rating on t	the first page

H 3.0. Is the habitat provided by the site valuable to society?		
		1
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose on	ly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
— It provides habitat for Threatened or Endangered species (any plant or animal on the s	tate or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natura</li> </ul>	al Resources	
— It has been categorized as an important habitat site in a local or regional comprehensiv	/e 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 = H1 = MX_0 = L	Record the rating on	the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

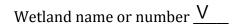
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number  $\underline{V}$ 

#### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
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> ■ No= <b>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 = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, 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 = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4  Imes No = Not a WHCV 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?	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? Yes = Is a Category I bog No – Go to SC 3.4	
<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 (> 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?	
$\Box Yes = Is a Category I bog \Box No = Is not a bog$	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
<ul> <li>SC 5.0. Wetlands in Coastal Lagoons <ul> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>The lagoon in which the wetland is located contains 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> <li>□Yes – Go to SC 5.1 ⊠No = Not a wetland in a coastal lagoon</li> <li>SC 5.1. Does the wetland meet all of the following three conditions?</li> <li>The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of 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 <sup>1</sup>/<sub>10</sub> ac (4350 ft<sup>2</sup>)</li> </ul></li></ul>	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): WDate of site visit:  $\frac{6/28/20}{2}$ Rated by Ryan Krapp & Jacob LaymanTrained by Ecology?  $\checkmark$  Yes \_\_\_\_\_No Date of training  $\frac{10/18 & 11/19}{2}$ HGM Class used for rating SlopeWetland has multiple HGM classes? Y  $\checkmark$  N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ESRI ArcGIS

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value		Ι
Bog		Ι
Mature Forest		Ι
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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)?

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 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).

XNO – 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  $\underline{W}$ 

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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)	
Slope is 1% or less points = 3	1
Slope is > 1%-2% points = 2	1
Slope is > 2%-5% points = 1	
Slope is greater than 5% points = 0	
1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions): Yes = 3 No = 0	0
have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.Dense, uncut, herbaceous plants > 90% of the wetland areapoints = 6Dense, uncut, herbaceous plants > ½ of areapoints = 3Dense, woody, plants > ½ of areapoints = 2Dense, uncut, herbaceous plants > ¼ of areapoints = 1	1
Does not meet any of the criteria above for plants points = 0	
Total for S 1Add the points in the boxes above	2
Rating of Site Potential If score is: $12 = H$ $6-11 = M$ $\times 0-5 = L$ Record the rating of Site Potential If score is:5 2.0. Does the landscape have the potential to support the water quality function of the site?	on the first pa
5 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	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources	0

Rating of Landscape Potential If score is: X 1-2 = M

Other sources

Total for S 2

Add the points in the boxes above 1

Yes = 1 No = 0

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	0	
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	1	
S 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 unit is found. Yes = 2 No = 0	2	
Total for S 3Add the points in the boxes above	3	

Rating of Value If score is:  $\times$  2-4 = H \_\_\_1 = M \_\_\_0 = L

Record the rating on the first page

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream eros	sion
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 points = 0         Rating of Site Potential       If score is:1 = M X_0 = L       Record the rating on	0 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	1
Rating of Landscape Potential If score is: X 1 = M0 = 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	2
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0

Total for S 6

Rating of Value If score is: X 2-4 = H \_\_\_1 = M \_\_\_0 = L

Record the rating on the first page

2

Yes = 2 No = 0

Add the points in the boxes above

#### NOTES and FIELD OBSERVATIONS:

The wetland is only occasionally mowed and/or grazed. Water quality my be affected at times however, rooted grasses for haying is the dominant condition. Point given for Water Quality (2.1) but not Hydrology (5.1).

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?	<u>.</u>
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.        Aquatic bed       4 structures or more: points = 4        X Emergent       3 structures: points = 2        X Scrub-shrub (areas where shrubs have > 30% cover)       2 structures: points = 1        X Forested (areas where trees have > 30% cover)       1 structure: points = 0         If the unit has a Forested class, check if:      The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)         that each cover 20% within the Forested polygon       1	2
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 ( <i>see text for descriptions of hydroperiods</i> ).        Permanently flooded or inundated       4 or more types present: points = 3        Seasonally flooded or inundated       3 types present: points = 2        Occasionally flooded or inundated       2 types present: points = 1        Saturated only       1 type present: points = 0        Permanently flowing stream or river in, or adjacent to, the wetland       2 points        Seasonally flowing stream in, or adjacent to, the wetland       2 points        Lake Fringe wetland       2 points        Freshwater tidal wetland       2 points	0
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 5 - 19 species <pre></pre>	1
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points All three diagrams in this row are HIGH = 3points 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. <i>If you</i> have four or more plant classes or three classes and open water, the rating is always high. Low = 1 point All three diagrams in this row are HIGH = 3points	2

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
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>	
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> )	
Total for H 1Add the points in the boxes above	5

**Rating of Site Potential** If score is: \_\_\_\_**15-18 = H** \_\_\_\_**7-14 = M** \_\_\_\_**X0-6 = 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?		
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ). <i>Calculate:</i> 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] If total accessible habitat is:	=%	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 11.55 % undisturbed habitat + [(% moderate and low intensity land uses) 22.69/2] Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	= <u>22.89500000000</u> % points = 3 points = 2 points = 1 points = 0	1
≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2 Add the points in the	boxes above	-1
Rating of Landscape Potential If score is: $4-6 = H$ $1-3 = M$ $\times < 1 = L$ Record	d the rating on t	he 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? <i>Choose only the highest scouthat applies to the wetland being rated.</i>	re
Site meets ANY of the following criteria: points =	2
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal list	.s)
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— 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
<b>Rating of Value</b> If score is: $2 = H$ $1 = M$ $\times 0 = L$ Record the ratin	g on the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number  $\underline{W}$ 

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category		
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.			
SC 1.0. Estuarine wetlands			
Does the wetland meet the following criteria for Estuarine wetlands?			
The dominant water regime is tidal,			
Vegetated, and			
□ With a salinity greater than 0.5 ppt □ Yes –Go to SC 1.1 ⊠No= Not an estuarine wetland			
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area			
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?			
Yes = Category I No - Go to SC 1.2			
SC 1.2. Is the wetland 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.			
SC 2.0. Wetlands of High Conservation Value (WHCV)			
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High			
Conservation Value? $\Box$ Yes – Go to SC 2.2 $\boxtimes$ No – Go to SC 2.3			
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?			
□Yes = Category I  ☑No = Not a WHCV			
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?			
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf			
□ Yes - Contact WNHP/WDNR and go to SC 2.4 ⊠No = Not a WHCV			
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?			
SC 3.0. Bogs			
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key			
below. If you answer YES you will still need to rate the wetland based on its functions.			
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog			
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? $\Box$ Yes = Is a Category I bog $\Box$ No – Go to SC 3.4			
<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 (> 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 = Is a Category I bog □No = Is not a bog			

SC 4.0. Forested Wetlands	
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>If you answer YES you will still need to rate</b> <b>the wetland based on its functions.</b>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the</li> </ul>	
species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). □ Yes = Category I 区No = Not a forested wetland for this section	
<ul> <li>SC 5.0. Wetlands in Coastal Lagoons <ul> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>The lagoon in which the wetland is located contains ponded water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)</li> <li>□Yes – Go to SC 5.1 ≥No = Not a wetland in a coastal lagoon</li> </ul> </li> <li>SC 5.1. Does the wetland meet all of the following three conditions?</li> <li>The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of 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> </ul>	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> ) $\Box$ Yes = <b>Category I</b> $\Box$ No = <b>Category II</b>	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 — Yes – Go to SC 6.1 ⊠No = not an interdunal wetland for rating	
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)?       □Yes = Category I       □No – Go to SC 6.2         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?       □Yes = Category II       □No – Go to SC 6.3	
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?	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number  $\underline{W}$ 

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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): X Date of site visit:  $\frac{6/28/19}{10^{118 \& 11/19}}$ Rated by Ryan Krapp & Jacob Layman Trained by Ecology? Yes No Date of training  $\frac{10/18 \& 11/19}{10^{118 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y V N

**NOTE:** Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** []] (based on functions  $\checkmark$  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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	Μ	L	
Value	Н	Н	М	TOTAL
Score Based on Ratings	6	6	4	16

Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H

9 - n,n,n 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	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	Ι	
Old Growth Forest	I	
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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.

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).

XNO – go to 4

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

4. <u>Does the entire wetland unit **meet all** of the following criteria?</u>

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  $\underline{X}$ 

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wa	ter quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
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	points = 3 g outlet. points = 2	3
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Ye	s = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cow	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	0
Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the b	oxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in question Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

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. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	4
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 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 = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	0
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of upstream basin</i> <i>contributing surface water to the wetland to the area of the wetland unit itself</i> . The area of the basin is less than 10 times the area of the unit points = 5 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	0
Total for D 4Add the points in the boxes above	4
Rating of Site Potential If score is:12-16 = H $6-11 = M$ $\times$ 0-5 = LRecord 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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential       If score is:3 = H       X_1 or 2 = M       0 = L       Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best matches conditions around the wetland unit being rated. Do not add points. <u>Choose the highest score if more than one condition is met</u>. 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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> <li>There are no problems with flooding downstream of the wetland.</li> </ul> </i></li> </ul>	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 No = 0	
Total for D 6     Add the points in the boxes above	2
<b>Rating of Value</b> If score is: $\times 2-4 = H$ $\_1 = M$ $\_0 = L$ 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.        Aquatic bed       4 structures or more: points = 4        Amultic bed       3 structures: points = 2        Scrub-shrub (areas where shrubs have > 30% cover)       2 structures: points = 1        Forested (areas where trees have > 30% cover)       1 structure: points = 0         If the unit has a Forested class, check if:      The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)         that each cover 20% within the Forested polygon       1 structures	0
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).        Permanently flooded or inundated       4 or more types present: points = 3        Seasonally flooded or inundated       3 types present: points = 2        Occasionally flooded or inundated       2 types present: points = 1        Saturated only       1 type present: points = 0        Permanently flowing stream or river in, or adjacent to, the wetland       2 points        Seasonally flowing stream in, or adjacent to, the wetland       2 points        Seasonally flowing stream in, or adjacent to, the wetland       2 points	0
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 5 - 19 species points = 1 < 5 species points = 0	1
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. <i>If you</i> <i>have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points All three diagrams in this row are HIGH = 3points	0

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>Undercut banks are present for at least 6.6 ft (2 m) and/or 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)</li> <li>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>)</li> <li>At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are</li> </ul>	1
permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_7-14 = M \_\_\_\_70-6 = L

Record the rating on the first page

<ul> <li>1 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).</li> <li>Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 0 /2] = 0 %</li> <li>If total accessible habitat is:</li> </ul>	
$^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3	
20-33% of 1 km Polygon points = 2	0
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
I 2.2. Undisturbed habitat in 1 km Polygon around the wetland.       Calculate: 11.55       % undisturbed habitat + [(% moderate and low intensity land uses) 22.69]/2]       = 22.8950000000 %         Undisturbed habitat > 50% of Polygon       points = 3         Undisturbed habitat 10-50% and in 1-3 patches       points = 2         Undisturbed habitat 10-50% and > 3 patches       points = 1         Undisturbed habitat < 10% of 1 km Polygon	1
<ul> <li>I 2.3. Land use intensity in 1 km Polygon: If</li> <li>&gt; 50% of 1 km Polygon is high intensity land use</li> <li>≤ 50% of 1 km Polygon is high intensity</li> </ul>	-2
Total for H 2 Add the points in the boxes above	-1

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 on	ly the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the s</li> </ul>	tate or federal lists)	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>		1
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natura</li> </ul>	al Resources	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive</li> </ul>	ve plan, in a	
Shoreline Master Plan, or in a watershed plan		
<ul> <li>Site has 1 or 2 priority habitats (listed on next page) within 100 m</li> </ul>	points = 1	
Site does not meet any of the criteria above	points = 0	
		<u> </u>
Rating of Value If score is: 2 = H X1 = M 0 = L	Record the rating on	the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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*).
- **Kiparian**: 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.

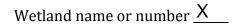
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number  $\underline{X}$ 

#### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
$\Box$ The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>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 = Category I □No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
$\Box$ 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 Spartina, 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 = Category I No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I ⊠No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – Contact WNHP/WDNR and go to SC 2.4 XNo = Not a WHCV	
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?	
SC 3.0. Bogs	1
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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 = Is a Category I bog $\Box$ No – Go to SC 3.4	
<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 (> 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 = Is a Category I bog □No = Is not a bog	

SC 4.0. Forested Wetlands	
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? <i>If you answer YES you will still need to rate</i> <i>the wetland based on its functions.</i>	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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>Mature forests (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>	
□Yes = Category I 区No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons         Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?         — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks         — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)         □Yes – Go to SC 5.1       ⊠No = Not a wetland in a coastal lagoon         SC 5.1. Does the wetland meet all of the following three conditions?       — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).         — 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 is larger than <sup>1</sup> / <sub>10</sub> ac (4350 ft <sup>2</sup> )	
SC 6.0. Interdunal Wetlands         Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If         you answer yes you will still need to rate the wetland based on its habitat functions.         In practical terms that means the following geographic areas:         — Long Beach Peninsula: Lands west of SR 103         — Grayland-Westport: Lands west of SR 105         — Ocean Shores-Copalis: Lands west of SR 115 and SR 109         □Yes – Go to 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)?         □Yes = Category I         SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?         □Yes = Category II       □No – Go to SC 6.3         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?         □Yes = Category III       □No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



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# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):  $\underline{Y}$  Date of site visit:  $\underline{^{6/28/19}}$ Rated by Ryan Krapp & Jacob Layman Trained by Ecology?  $\underline{\checkmark}$  Yes No Date of training  $\underline{^{10/18 \& 11/19}}$ 

HGM Class used for rating Depressional Wetland has multiple HGM classes? ✓ Y \_\_\_\_N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>ESRI ArcGIS</u>

**OVERALL WETLAND CATEGORY** <u>IV</u> (based on functions <u>v</u> 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	
		Circle the ap	propriate ratings	
Site Potential	L	L	L	
Landscape Potential	М	М	L	
Value	Н	Н	L	TOTAL
Score Based on Ratings	6	6	3	15

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	Ι	II
Wetland of High Conservation Value		Ι
Bog	I	
Mature Forest	I	
Old Growth Forest		Ι
Coastal Lagoon	Ι	II
Interdunal	I II	III IV
None of the above	N/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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	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)?

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 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).

XNO – 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  $\underline{Y}$ 

- 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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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 wat	er quality	
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (n	-	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing	points = 3 outlet. points = 2	2
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 = 1 points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes	= 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowa	ardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	0
Wetland has persistent, ungrazed plants $> 1/10$ of area	points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
This is the area that is ponded for at least 2 months. See description in manual.		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	0
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1Add the points in the bo	oxes above	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  $\times 0-5 = L$  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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questi Source	ons D 2.1-D 2.3? Yes = 1 No = 0	0
Total for D 2   Add the points	in the boxes above	2

**Rating of Landscape Potential** If score is: 3 or 4 = H  $\times 1$  or 2 = M 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	0
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	1
D 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 the unit is found</i> )? Yes = 2 No = 0	
Total for D 3Add the points in the boxes above	3
Rating of ValueIf score is: $\times 2-4 = H$ $1 = M$ $0 = L$ Record the rating on the first page	

NOTES and FIELD OBSERVATIONS:

(D 1.3) Wetland is mowed/hayed to shorter than 6 inches annually.

E

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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 outletpoints = 7Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	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 unitpoints = 5The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire wetland is in the Flats classpoints = 5	0
Total for D 4 Add the points in the boxes above	2
Rating of Site Potential If score is: 12-16 = H6-11 = M0-5 = 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	1
Total for D 5Add the points in the boxes above	1
Rating of Landscape Potential If score is:       3 = H × 1 or 2 = M 0 = L       Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	-
<ul> <li>D 6.1. <u>The unit is in a landscape that has flooding problems</u>. <i>Choose the description that best matches conditions around the wetland unit being rated.</i> Do not add points. <u>Choose the highest score if more than one condition is met</u>. 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): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient.</li> <li>points = 1</li> <li>Flooding from groundwater is an issue in the sub-basin.</li> <li>points = 1</li> <li>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. <i>Explain why</i> points = 0</li> <li>There are no problems with flooding downstream of the wetland.</li> </ul> </li> </ul>	2
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 6Add the points in the boxes above	2
<b>Rating of Value</b> If score is: $\times 2-4 = H$ 1 = M0 = L	first page

These questions apply to wetlands	of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provide	e important habitat	-
H 1.0. Does the site have the potential to provide habitat?		r
H 1.1. Structure of plant community: Indicators are Cowardin classes and str Cowardin plant classes in the wetland. Up to 10 patches may be comb of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add th Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shructure that each cover 20% within the Forested polygon	ined for each class to meet the threshold e number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	0
H 1.2. Hydroperiods		
Check the types of water regimes (hydroperiods) present within the w more than 10% of the wetland or ¼ ac to count ( <i>see text for description</i> Permanently flooded or inundated Seasonally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Seasonally flowing stream in, or adjacent to, the wetlan Lake Fringe wetland Freshwater tidal wetland	ans of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 1 Different patches of the same species can be combined to meet the siz the species. <b>Do not include Eurasian milfoil, reed canarygrass, purp</b> If you counted: > 19 species 5 - 19 species < 5 species	e threshold and you do not have to name	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowar the classes and unvegetated areas (can include open water or mudflat have four or more plant classes or three classes and open water, the re- None = 0 points All three diagrams in this row are HIGH = 3points	ts) is high, moderate, low, or none. If you	0

Wetland name or number  $\underline{Y}$ 

H 1.5. Special habitat features:	
<ul> <li>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></li> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> <li>Standing snags (dbh &gt; 4 in) within the wetland</li> <li>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)</li> <li>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>)</li> <li>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>)</li> <li>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>)</li> </ul>	0
Total for H 1Add the points in the boxes above	2

Rating of Site Potential If score is: \_\_\_\_15-18 = H \_\_\_\_7-14 = M \_\_\_\_70-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat fu	nctions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit Calculate:</i> 0 % undisturbed habitat + [(% moderate and low inte If total accessible habitat is:		
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	0
20-33% of 1 km Polygon	points = 2	
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 11.55 % undisturbed habitat + [(% moderate and low interesting the second		
Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches	points = 3 points = 2	1
Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	points = 1 points = 0	
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Total for H 2	Add the points in the boxes above	-1
Rating of Landscape Potential If score is: $4-6 = H$ $1-3 = M \times < 1 = I$	L Record the rating on	the first nao

Rating of Landscape Potential if score is: $4-6 = H$ $1-3 = M$ $4 < 1 = L$
H = 0 is the habitat provided by the site valuable to society?

Record the rating on the first page

-1

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	2
that applies to the wetland being rated.	
Site meets ANY of the following criteria: points = 2	2
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists	;)
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	0
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— 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	L
× Site does not meet any of the criteria above points = 0	)
<b>Rating of Value</b> If score is: $2 = H$ $1 = M \times 0 = L$ Record the rating	on the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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: <u>Old-growth west of Cascade crest</u> 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. <u>Mature forests</u> 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.

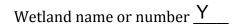
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number  $\underline{Y}$ 

### **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

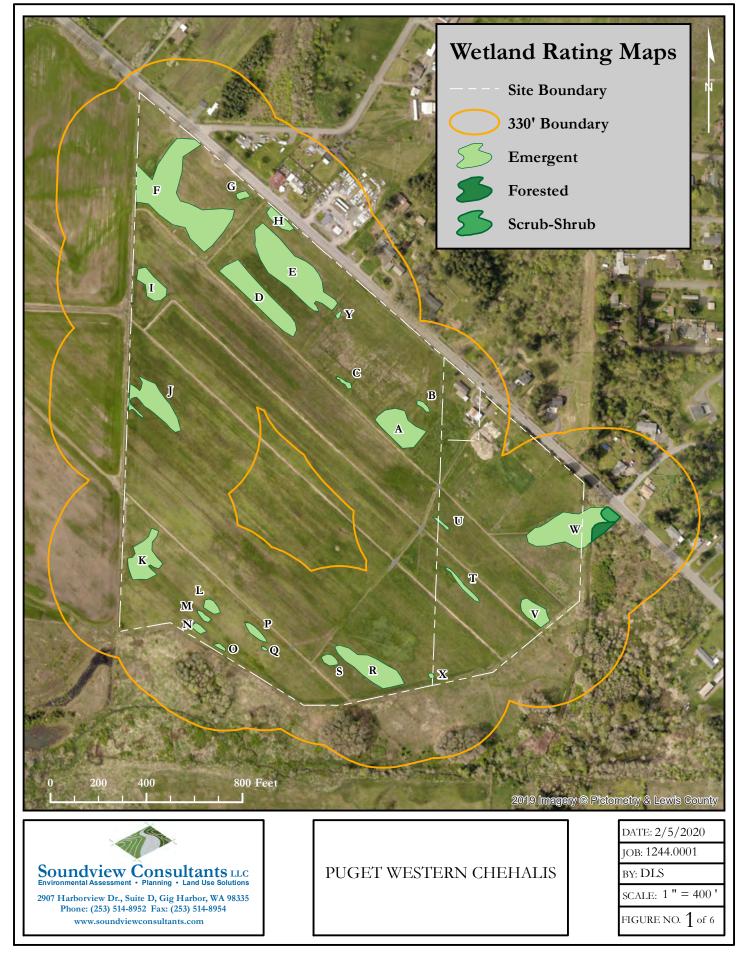
Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>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 = Category I No - Go to SC 1.2	
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 Spartina, 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.	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
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?	
□Yes = Category I	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
$\Box Yes - Contact WNHP/WDNR and go to SC 2.4  \boxtimes No = Not a WHCV$	
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 = Category I       ☑No = Not a WHCV	
	+
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No – Go to SC 3.2	
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? $\Box$ Yes – Go to SC 3.3 $\boxtimes$ No = Is not a bog	
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 = Is a Category I bog No – Go to SC 3.4	
<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 (> 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?	
Species (or combination of species) listed in Table 4 provide more than 50% of the cover under the catopy $P$	

SC 4.0. Forested Wetlands	
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? If you answer YES you will still need to rate	
the wetland based on its functions.	
<ul> <li>Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of</li> </ul>	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
— Mature forests (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).	
□Yes = Category I	
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
$\Box Yes - Go to SC 5.1  \Box No = Not a wetland in a coastal lagoon$	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> ) $\Box$ Yes = <b>Category I</b> $\Box$ No = <b>Category I</b>	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> </ul>	
— Grayland-Westport: Lands west of SR 105	
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
□Yes – Go to <b>SC 6.1</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)? $\Box$ Yes = <b>Category I</b> $\Box$ No – Go to <b>SC 6.2</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?	
Yes = Category II	
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?	
Yes = Category III No = Category IV	
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	

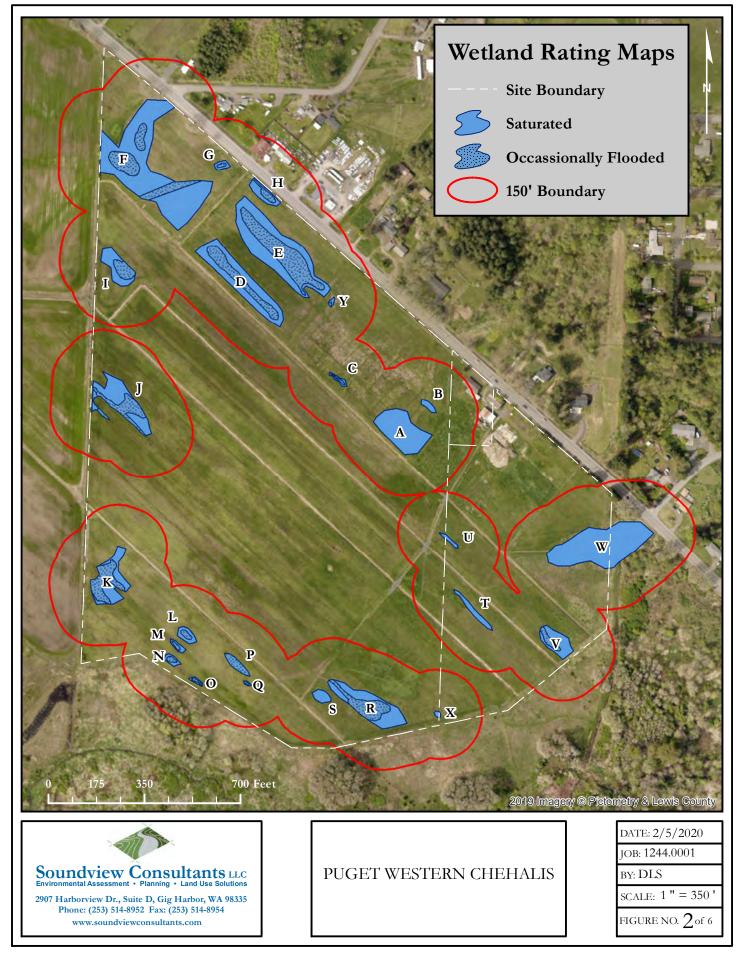


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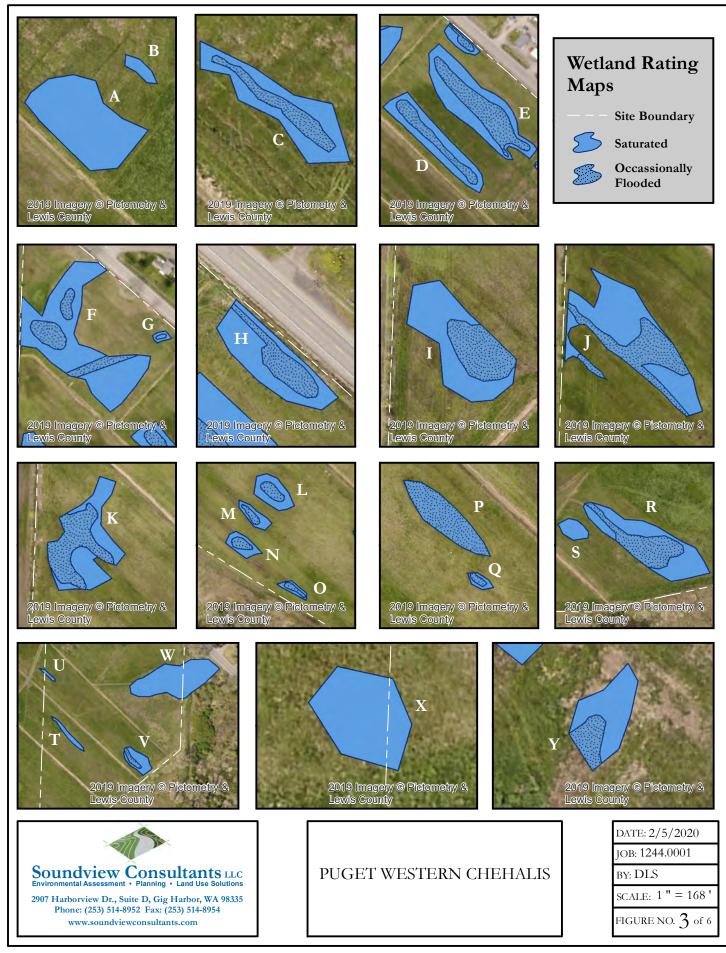
## PUGET WESTERN CHEHALIS - COWARDIN MAP



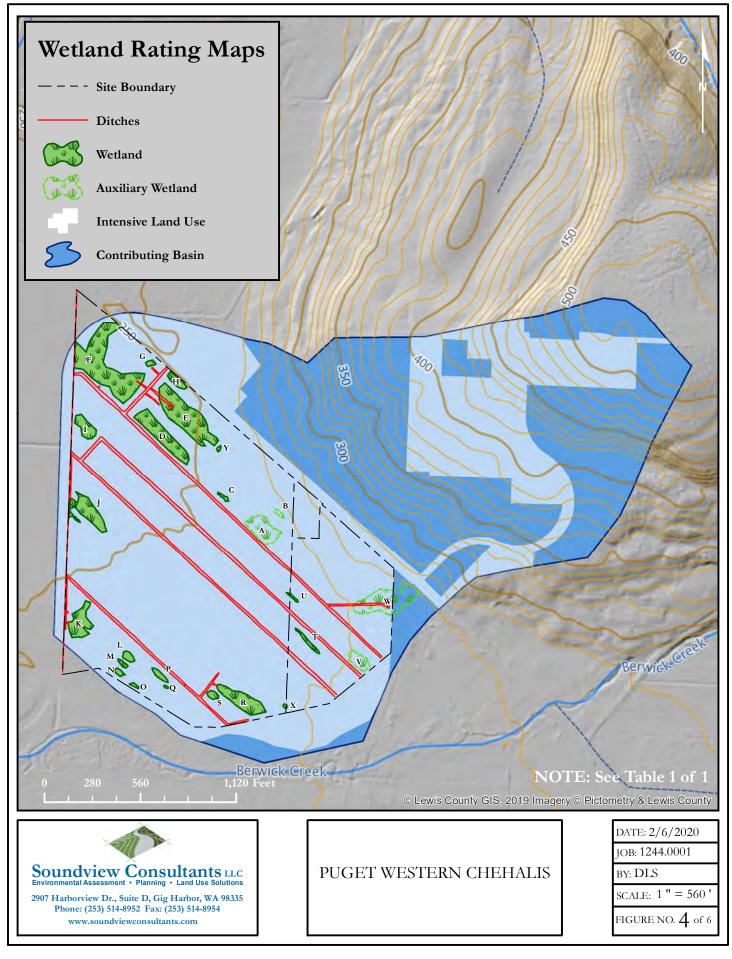
## PUGET WESTERN CHEHALIS - HYDROPERIOD MAP



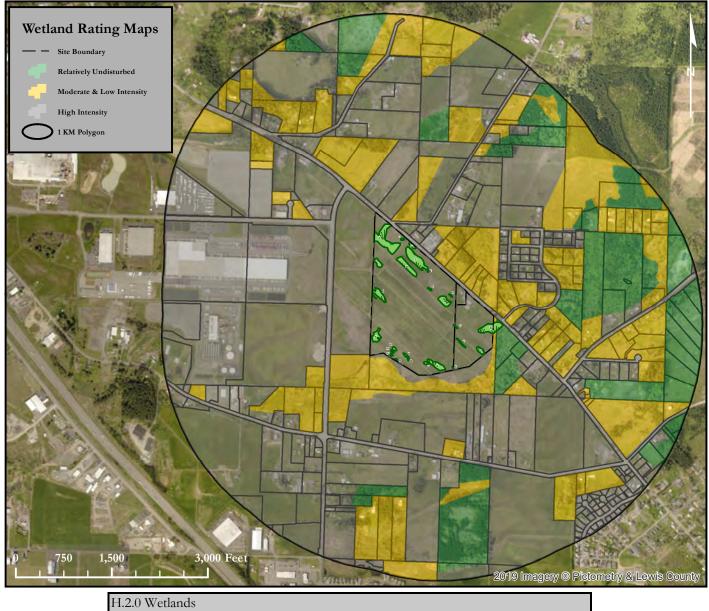
## PUGET WESTERN CHEHALIS - HYDROPERIOD DETAIL MAP



## PUGET WESTERN CHEHALIS - CONTRIBUTING BASIN MAP



## PUGET WESTERN CHEHALIS - HABITAT MAP



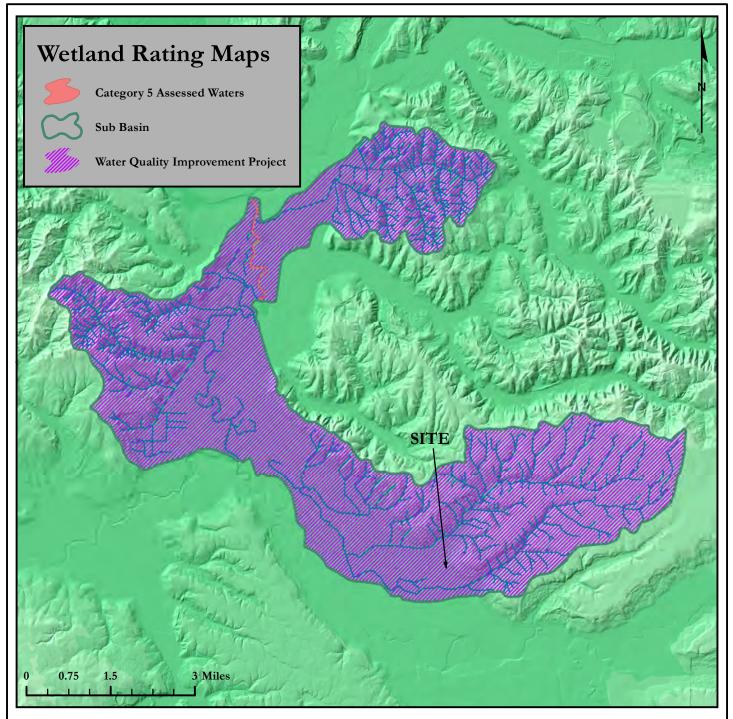
H.2.1		0.000/
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.00%
	Accessible Habitat	0.00%
H.2.2		
	Undisturbed Habitat	11.55%
	Moderate & Low Intensity Land Uses	22.69%
	Undisturbed Habitat in 1 KM Polygon	22.89%
Н.2.3		
	High Intensity Land Use in 1 KM Polygon	65.76%



PUGET WESTERN CHEHALIS



## PUGET WESTERN CHEHALIS - 303(D) MAP



Name	Pollutants	TMDL	Year Ap	pproved
Upper Chehalis River Bacteria TMDL	Bacteria		56	2004
Upper Chehalis River Basin Temperature TMDL	Temperature		36	2001
Upper Chehalis River Basin Dissolved Oxygen TMDL	Dissolved Oxygen, BOD5, Ammonia-N		30	1996



PUGET WESTERN CHEHALIS

JOB: 1244.0001 BY: DLS	JOB: 1244.0001	DATE: 2/6/2020	
BY: DLS	BY: DLS		
		5	
	SCALE. I Z III		ni

## PUGET WESTERN CHEHALIS - CONTRIBUTING BASIN TABLE

D.4.3		1
	Area of Contributing Basin (SF)	6,727,604
	Area of Wetland C (SF)	1,06
	Percent of Wetland C within Contributing Basin	0.016%
	Area of Wetland D (SF)	28,38
	Percent of Wetland D within Contributing Basin	0.422%
	Area of Wetland E (SF)	48,350
	Percent of Wetland E within Contributing Basin	0.719%
	Area of Wetland F (SF)	72,96
	Percent of Wetland F within Contributing Basin	1.085%
	Area of Wetland G (SF)	1,382
	Percent of Wetland G within Contributing Basin	0.021%
	Area of Wetland H (SF)	4,790
	Percent of Wetland H within Contributing Basin	0.071%
	Area of Wetland I (SF)	9,458
	Percent of Wetland I within Contributing Basin	0.141%
	Area of Wetland J (SF)	19,673
	Percent of Wetland J within Contributing Basin	0.292%
	Area of Wetland K (SF)	16,939
	Percent of Wetland K within Contributing Basin	0.252%
	Area of Wetland L (SF)	2,752
	Percent of Wetland L within Contributing Basin	0.041%
	Area of Wetland M (SF)	1,260
	Percent of Wetland M within Contributing Basin	0.019%
	Area of Wetland N (SF)	1,502
	Percent of Wetland N within Contributing Basin	0.022%
	Area of Wetland O (SF)	723
	Percent of Wetland O within Contributing Basin	0.011%
	Area of Wetland P (SF)	2,770
	Percent of Wetland P within Contributing Basin	0.041%
	Area of Wetland Q (SF)	298
	Percent of Wetland Q within Contributing Basin	0.004%
	Area of Wetland R (SF)	21,045
	Percent of Wetland R within Contributing Basin	0.313%
	Area of Wetland S (SF)	2,292
	Percent of Wetland S within Contributing Basin	0.034%
	Area of Wetland T (SF)	2,993
	Percent of Wetland T within Contributing Basin	0.044%
	Area of Wetland U (SF)	889
	Percent of Wetland U within Contributing Basin	0.013%
	Area of Wetland X (SF)	414
	Percent of Wetland X within Contributing Basin	0.006%
	Area of Wetland Y (SF)	474
	Percent of Wetland Y within Contributing Basin	0.007%
	Area of Intensive Human Land Uses	4,622,951
	Percent of Intensive Human Land Use	
	within Contributing Basin	69%



#### PUGET WESTERN CHEHALIS

DATE: 2/5/2020 JOB: 1244.0001 BY: DLS SCALE: N/A TABLE NO. 1 of 1

# Appendix H — Qualifications

All field inspections, wetland and OHW determinations, habitat assessments, and supporting documentation, including this <u>Wetland and Fish and Wildlife Habitat Assessment Report and</u> <u>Conceptual Mitigation Plan</u> prepared for the <u>Jackson Highway</u> project were prepared by, or under the direction of, Racheal Villa of SVC. In addition, the site investigations and report preparation were completed by Ryan Krapp, Kyla Caddey and Jake Layman.

#### **Racheal Villa**

Senior Scientist and Fisheries Biologist Professional Experience: 15 years

Racheal Villa is a professional fisheries biologist with a diverse background in both freshwater and marine ecology with emphasis in salmonid life histories and habitat. She has experience in assessing marine, shoreline, stream, and wetland systems, reporting on biological evaluations, permitting, and site assessments.

Racheal earned a Bachelor of Science degree in Fisheries Biology from the University of Washington, Seattle, with additional graduate level training in salmonid behavior and life history; restoration of fish communities and habitats in river ecosystems; biological problems with water pollution; and biomonitoring and assessment.

In addition, she has received formal training in Compensatory Mitigation and Restoration Projects, Determining the Ordinary High Water Mark, the revised Washington State Wetland Rating System, Selecting Wetland Mitigation Sites Using a Watershed Approach from the Washington State Department of Ecology; Biological Assessment Preparation for Transportation Projects from the Washington State Department of Transportation; and Seagrass Biology, Delineation, and Mapping from the United States Army Corps of Engineers. She is also a Pierce County qualified Fisheries Biologist and qualified Wetland Specialist.

#### Ryan Krapp

Environmental Scientist and Field Lead Professional Experience: 11 years

Ryan Krapp is an Environmental Scientist and Field Lead with a background in conducting critical habitat investigations, wetland delineations, botanical surveys, avian surveys, threatened & endangered species surveys, and fisheries studies. He has considerable experience in production of Environmental Assessments and Biological Assessments and Evaluations, under NEPA guidelines for projects regulated by the U.S. Forest Service, U.S. Army Corps of Engineers, and Bureau of Indian Affairs as well as leading Section 7 ESA consultation with the U.S. Fish and Wildlife Service. Project planning, permitting, and compliance are all part of his professional experiences and practices at SVC.

Ryan has managed environmental investigation projects including wetlands, streams, and critical habitats data collection on large pipeline corridors, overhead electrical transmission corridors, and oil/natural gas drilling development. He has extensive experience in utilizing GIS to collect, manage, and analyze large volumes of spatial and temporal field data to aide in project management,

monitoring, analysis, and mapping. In addition, he is a FAA trained recreational pilot and a PADI certified SCUBA diver with fresh and saltwater diving experience.

#### Kyla Caddey

Environmental Scientist Professional Experience: 5 years

Kyla Caddey is an Environmental Scientist with a diverse background in riparian habitat restoration, stream and wetland ecology, wildlife ecology and conservation, and wildlife and natural resource assessments and monitoring. Kyla has advanced expertise in report preparation, grant writing, environmental education, data compilation and statistical analysis. Kyla has field experience performing in-depth studies in both the Pacific Northwest and Central American ecosystems. She currently performs wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the regulatory and planning process for various land use projects.

Kyla earned a Bachelor of Science degree in Environmental Science and Resource Management from the University of Washington, Seattle with a focus in Wildlife Conservation and a minor in Quantitative Science. She has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement), is a Pierce County Qualified Wetland Specialist and Wildlife Biologist, and is a USFWS-approved Mazama pocket gopher survey biologist. Kyla has been formally trained through the Washington State Department of Ecology, Coastal Training Program, and the Washington Native Plant Society in winter twig and grass, sedge, and rush identification for Western WA; Using the Credit-Debit Method in Estimating Wetland Mitigation Needs; How to Determine the Ordinary High Water Mark; Using Field Indicators for Hydric Soils; How to Administer Development Permits in Washington Shorelines; Puget Sound Coastal Processes; and Forage Fish Survey Techniques.

#### Jake Layman

Environmental Scientist Professional Experience: 10+ years

Jake Layman is an Environmental Scientist with a varied background in fisheries, wildlife, and aquatic invertebrate biology and stream and lake ecology. Jakes's expertise includes endangered species monitoring, lake limnology assessments, water chemistry profiles, off-channel habitat characterization, laboratory management, and terrestrial and aquatic amphibian identification with associated habitat assessments. Jake also has experience in fish population assessments, stream typing, spawning escapement, environmental disaster recovery, and amphibian toxicology research. Jake has over 10 years of experience at the federal and state level conducting ecological monitoring surveys throughout eastern and western Washington. He worked with the National Park Service to conduct environmental compliance monitoring on park construction projects, infrastructure maintenance projects, and federal highways projects. This position also included environmental spill response, fish exclusion surveys in support of construction, and effectiveness monitoring on Engineered Log Jam (ELJ) projects. Jake has worked with the Washington State Department of Fish and Wildlife (WDFW) to assess and inventory fish passage barriers and monitor culvert removal projects throughout Western Washington.

While working for WDFW, Jake managed the daily operation for the intensive habitat study, on offchannel wetlands, for the Chehalis Aquatic Resources Protection Plan (ASRP).

Jake earned Bachelor's degrees in both Biology, with an Ecology specialization, and Geography, with a Natural Resource Management specialization, from Central Washington University. In addition, Jake also has a Minor in Environmental Studies and a Certificate in Geographic Information Systems (GIS) and Cartography form Central Washington University. Jake has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement), Jake has received training from the Washington State Department of Ecology in <u>Environmental Negotiations</u>; <u>Navigating SEPA</u>; <u>Conducting Forage Fish Surveys</u>; <u>Puget Sound Coastal Processes</u>, <u>Shoreline Modifications</u>, and <u>Beach</u> <u>Restoration</u>; <u>Using the Marine Shoreline Design Guidelines for Marine Shoreline Stabilization</u>; <u>How to Determine the</u> <u>Ordinary High Water Mark</u>; and Using the Revised Washington State Wetland Rating System (2014) in Western <u>Washington</u>. Jake has electro-fisher operation and safety training from Smith-Root INC and Department of the Interior. (DOI). Jake also has an Open Water Scuba Diver certification through Scuba Diving International (SDI).