Attachment H



2000 24<sup>th</sup> Avenue NW REVISED CRITICAL AREAS STUDY

*Prepared for:* **RJ Development** August 2023







## 2000 24<sup>th</sup> Avenue NW REVISED CRITICAL AREAS STUDY

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## 1.0 INTRODUCTION

The project proposes to subdivide the property for residential development on tax parcel 09750029001 at 2000 24<sup>th</sup> Avenue NW, Olympia, Washington (Figure 1). Confluence Environmental Company (Confluence) prepared this report to assist with permitting the project. On October 25, 2022, May 30, 2023, and July 19, 2023, Confluence conducted a site investigation to determine the presence and extent of critical areas on and adjacent to the property. The effort focused on wetlands and fish and wildlife habitat conservation areas (FWHCAs). Critical areas such as erosion hazard areas, steep slopes, and landslide hazard areas were not evaluated in this study. This report discusses the results of the study.

The property is currently developed with a single-family residence, several outbuildings, and pasturelands. The western half of the property is relatively undisturbed in a forested condition. The property is 11 acres and zoned as residential 4-8, meaning 8 units per acre (Thurston County 2022).



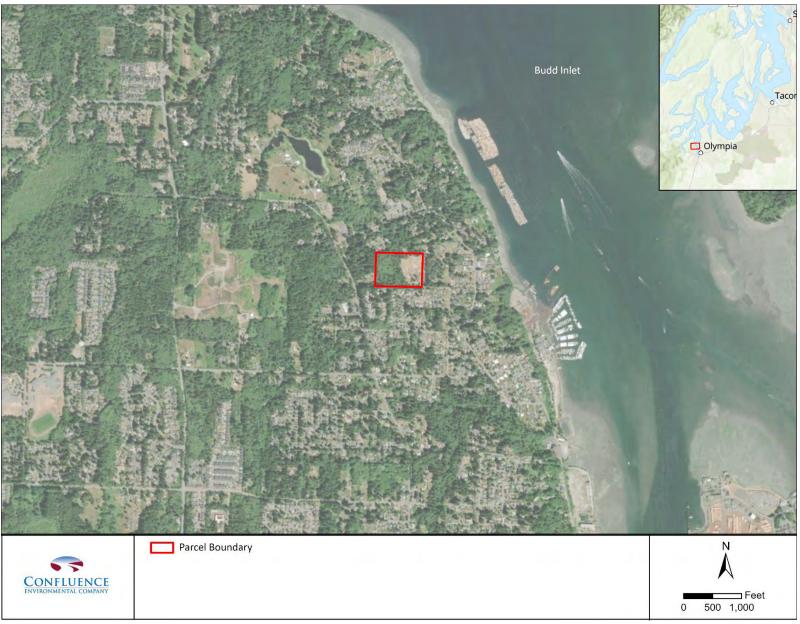


Figure 1. Subject property



## 2.0 METHODS

Confluence conducted a critical areas study on the property. This section describes the methods used to confirm the presence or absence of critical areas.

## 2.1 Desktop Analysis

To develop a strategy for the site investigation, Confluence reviewed relevant regulations and GIS databases.

Confluence reviewed Thurston County Code (TCC) to determine the standard buffer requirements for critical areas in the project vicinity.

Confluence reviewed the GIS databases listed below for the documented presence of wetlands, streams, lakes, or species listed under the Endangered Species Act as threatened or endangered on or within 300 feet of the subject property. It was necessary to search within 300 feet to determine whether buffers for off-site critical areas encroach onto the site (300 feet is the largest buffer identified in TCC).

- Thurston County GIS (Thurston County 2022)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2022)
- Natural Resources Conservation Service (NRCS) Soil Survey (NRCS 2022a)
- Washington Department of Fish and Wildlife (WDFW) SalmonScape (WDFW 2022a)
- WDFW Priority Habitats and Species (PHS) (WDFW 2022b)
- Washington Department of Natural Resources (WDNR) Water Type GIS (WDNR 2022a)
- WDNR wetlands of high conservation value mapper (WDNR 2022b)

Results of the GIS database searches are in Appendix A.

#### 2.2 Site Investigation

On October 25, 2022, May 30, 2023, and July 19, 2023, Confluence conducted a site investigation to determine the presence or absence of critical areas on or near the property.

#### 2.2.1 Wetlands

#### Wetland Identification and Delineation

Confluence identified wetlands and delineated their boundaries using the methods described by the U.S. Army Corps of Engineers (Corps) in the Corps of Engineers Wetlands Delineation Manual (Corps 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Corps 2010). The Corps typically requires that the following 3 characteristics be present for an area to be identified as a



wetland: (1) hydrophytic vegetation, (2) hydric soil, and (3) wetland hydrology. For each criterion, there are several possible indicators that can be used to determine whether the criterion has been met. The indicators were established so that if a wetland were present on-site, sufficient indicators would be observed at any time of the year, including the driest months, to identify the wetland. Since "normal circumstances," as defined by the Corps (1987), exist on the site, all 3 criteria must be present for an area to be determined a wetland. A more detailed description of delineation methodology is provided in Appendix B. Wetland delineation data forms completed during the site investigation are provided in Appendix C.

To confirm the presence or absence of a wetland, data were collected from representative test plots within and outside of potential wetlands. The locations of the test plots were based on the presence of visual wetland indicators (e.g., wetland vegetation, evidence of standing water) or were chosen to represent vegetative, topographic, or hydrologic features in the vicinity. Within these test plots, vegetation, soils, and hydrology were examined to determine whether wetland characteristics were present (see Appendix B for details). Plots that met all 3 wetland criteria were determined to be wetland plots; plots that did not meet all 3 wetland criteria were determined to be upland plots.

Once the presence of a wetland was confirmed, visual wetland indicators, such as topographic and vegetative shifts, were used to delineate the remainder of the wetland boundary. In areas with a lack of visual wetland indicators (i.e., areas with monoculture vegetation and no clear topographic break), Confluence used soil probes to determine the wetland boundary between test plots. Confluence evaluated the presence or absence of hydric soil and wetland hydrology indicators at soil probe locations to determine whether the area represented by the soil probe was wetland or upland. Soil probe locations and presence or absence of hydric soil and wetland hydrology indicators were recorded using GPS.

Confluence used the PLANTS Database (NRCS 2022b) to provide consistency in scientific naming and the 2020 National Wetland Plant List (Corps 2020) to determine the wetland indicator status of plants.

The wetland boundary and test plot locations were flagged using pink ribbon flagging. The flags were mapped using a Trimble mapping grade GPS receiver capable of sub-meter accuracy after post-processing.

#### **Off-Site Wetland Identification**

To assess whether there are possible wetlands with buffers encroaching from adjacent properties, Confluence modified the methods described by the Corps (Corps 1987, 2010). The modified method identified the presence or absence of visual wetland indicators. If hydrophytic vegetation was dominant and visual indicators of wetland hydrology were observed, then hydric soils were assumed to be present.



#### Wetland Rating

Confluence determined wetland ratings using the Washington State Wetland Rating System for Western Washington (Hruby 2014) to assess the resource value of any wetland identified on the site. This rating system is based on the wetland functions and values, sensitivity to disturbance, rarity, and irreplaceability.

Wetland rating forms are in Appendix D.

#### 2.2.2 Streams/Shorelines

No streams or shorelines were identified on the subject property, so no ordinary high water mark delineation was needed.



#### 3.0 RESULTS

#### 3.1 Desktop Analysis

USFWS's NWI (2022) does not map any wetlands on the subject property. Thurston County GIS (Thurston County 2022) identifies 1 wetland within the western portion of the property. No wetlands of high conservation value are mapped on or within the vicinity of the subject property (WDNR 2022b). No streams are mapped on or within the vicinity of the property (WDFW 2022a,b, WDNR 2022a, Thurston County 2022). The nearest mapped stream is located approximately 850 feet northeast of the subject property (WDNR 2022a, WDFW 2022a). The unnamed stream, unknown in type, discharges to Budd Inlet within Puget Sound. WDFW's PHS system identifies the potential presence of Yuma myotis (*Myotis yumanensis*), little brown bat (*Myotis lucifugus*), and big brown bat (*Eptesicus fuscus*) in the vicinity of the property. None of these species has status under the Endangered Species Act.

Soils mapped on the subject property are Alderwood gravelly sandy loam (8-15% slopes) and Alderwood gravelly sandy loam (15-30% slopes). Neither of these soils is identified as hydric (NRCS 2022a).

#### 3.2 Test Plots

During the site investigation, 10 test plots were established, in both uplands and wetlands. A soil probe was also collected to rapidly determine whether an area was wetland or upland. Test plot and soil probe locations are shown on Figure 2. Test plot characteristics are detailed below. Technical terms are explained in Appendix B. Photographs of the site are in Appendix E.

Test Plot 1 (TP-1) was located in the western half of the property in an area dominated by red alder (*Alnus rubra*), western red-cedar (*Thuja plicata*), salmonberry (*Rubus spectabilis*), Himalayan blackberry (*Rubus armeniacus*), Douglas spirea (*Spiraea douglasii*), slough sedge (*Carex obnupta*), skunk-cabbage (*Lysichiton americanus*), and lady fern (*Athyrium filix-femina*). Vegetation within TP-1 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-5 inches) was a black (10YR 2/1) silty clay loam. Soil in the second layer (5-9 inches) was a black (10YR 2/1) silty clay loam. Soil in the second layer (5-9 inches) was a black (10YR 4/6) redoximorphic concentrations in the matrix and 3% dark yellowish brown (10YR 4/6) redoximorphic concentrations in the matrix. The soils met the Redox Dark Surface (F6) and Depleted Below Dark Surface (A11) hydric soil indicators; therefore, the hydric soil criterion was met. One primary wetland hydrology indicator—Oxidized Rhizospheres along Living Roots (C3)—and 1 secondary indicators—FAC-Neutral Test (D5)—were observed. The presence of at least 1 primary or 2 secondary indicators meets the wetland hydrology criterion. Since TP-1 met all 3 criteria, the area represented by TP-1 is a wetland, identified as Wetland A.



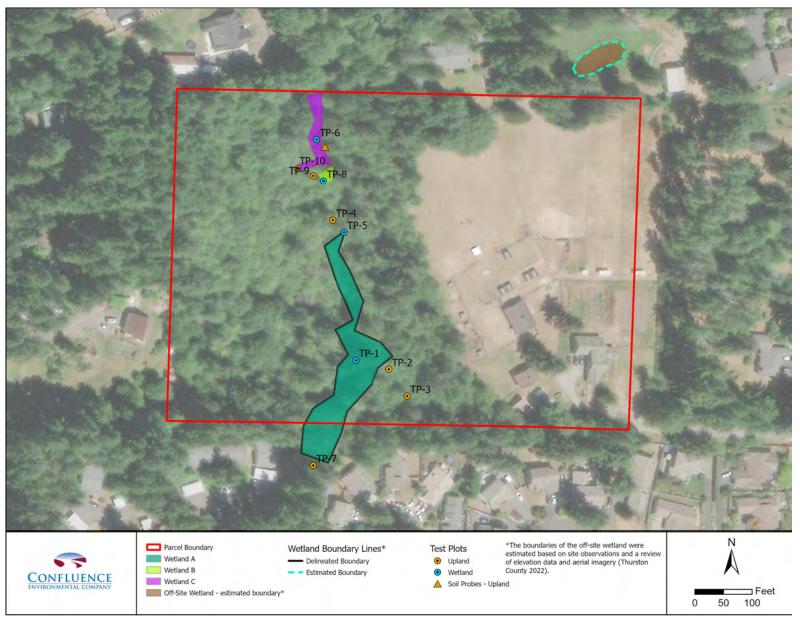


Figure 2. Location of test plots, soil probes, and wetlands



TP-2 was located in the western half of the property immediately east of TP-1. Vegetation was dominated by red alder, salmonberry, evergreen huckleberry (*Vaccinium ovatum*), sword fern (*Polystichum munitum*), field horsetail (*Equisetum arvense*), trailing blackberry (*Rubus ursinus*), and English ivy (*Hedera helix*). Vegetation within TP-2 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-9 inches) was a very dark brown (10YR 2/2) silt loam. Soil in the second layer (9-14+ inches) was a gray (2.5Y 5/1) silt loam with 5% dark yellowish brown (10YR 4/6) redoximorphic concentrations in the matrix. The soils met the Redox Dark Surface (F6) and Depleted Below Dark Surface (A11) hydric soil indicators; therefore, the hydric soil criterion was met. No primary or secondary wetland hydrology indicators were observed; thus, the wetland hydrology criterion was not met. Since TP-2 did not meet all 3 criteria, the area represented by TP-2 is not a wetland. TP-2 represents the transition area adjacent to Wetland A.

TP-3 was located in the western half of the property south of TP-2 in an area dominated by western red-cedar, red alder, evergreen huckleberry, salmonberry, slough sedge, sword fern, and trailing blackberry. Vegetation within TP-3 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-10 inches) was a very dark brown (10YR 2/2) silt loam. Soil in the second layer (10-12+ inches) was a dark yellowish brown (10YR 4/4) silt loam. The soils did not meet any hydric soil indicator; therefore, the hydric soil criterion was not met. No primary or secondary wetland hydrology indicators were observed; thus, the wetland hydrology criterion was not met. Since TP-3 did not meet all 3 criteria, the area represented by TP-3 is not a wetland.

TP-4 was located in the western half of the property north of TP-3. Vegetation was dominated by red alder, salmonberry, salal (*Gaultheria shallon*), and slough sedge. Vegetation within TP-4 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-9 inches) was a very dark brown (10YR 2/2) silt loam. Soil in the second layer (9-12+ inches) was a dual matrix: a very dark grayish brown (10YR 3/2) and a brown (10YR 4/3) silt loam. The soils did not meet any hydric soil indicator; therefore, the hydric soil criterion was not met. No primary or secondary wetland hydrology indicators were observed; thus, the wetland hydrology criterion was not met. Since TP-4 did not meet all 3 criteria, the area represented by TP-4 is not a wetland.

TP-5 was located southwest of TP-4 in an area dominated by red alder, Douglas spirea, and soft rush (*Juncus effusus*). Vegetation within TP-5 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-4 inches) was a very dark grayish brown (10YR 3/2) silt loam. Soil in the second layer (4-9 inches) was a dual matrix with 80% very dark grayish brown (10YR 3/2) silt loam and 20% dark grayish brown (2.yY 4/2) silt loam. Soil in the third layer (9-13+ inches) was a gray (10YR 6/1) silt loam with 50% yellowish brown (10YR 5/8) redoximorphic concentrations in the matrix. The soils met the Depleted Below Dark Surface (A11) hydric soil indicator; therefore, the hydric soil criterion was met. One primary wetland



hydrology indicator – Water-Stained Leaves (B9) – and 1 secondary indicators – FAC-Neutral Test (D5) – were observed. The presence of at least 1 primary or 2 secondary indicators meets the wetland hydrology criterion. Since TP-5 met all 3 criteria, the area represented by TP-5 is a wetland, identified as Wetland A.

TP-6 was located north of TP-4. Vegetation was dominated by red alder, western red-cedar, salmonberry, and slough sedge. Vegetation within TP-6 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-7 inches) was a very dark gray (10YR 3/1) silt loam. Soil in the second layer (7-11 inches) was a dark grayish brown (10YR 4/2) silt loam with less than 1% yellowish brown (10YR 5/6) redoximorphic concentrations in the matrix. Soil in the third layer was a brown (10YR 5/3) silt loam with 10% yellowish brown (10YR 5/6) redoximorphic concentrations in the matrix. The soils did not meet any hydric soil indicator; therefore, the hydric soil criterion was not met. During an April 2023 site visit by Thurston County, inundation was observed in this area (H. Tschaekofske, email dated July 6, 2023). During the October 2022 site visit no wetland hydrology indicators were observed in this area. However, during the May 2023 site visit by Confluence, 1 primary wetland hydrology indicator—Water-Stained Leaves (B9)—and 1 secondary indicator—FAC-Neutral Test (D5) were observed. The presence of at least 1 primary or 2 secondary indicators meets the wetland hydrology criterion. The wetland hydrology indicators observed in April and May 2023 indicate that water is present during some portion of the growing season. However, it is unclear if that water is present for a sufficient amount of time for hydric soil to develop. During Thurston County's April 2023 site visit, they also dug 3 test pits in the vicinity of TP-6 (H. Tschaekofske, email dated July 6, 2023). One pit north of TP-6 and 1 pit south of TP-6 met the Depleted Matrix (F6) or Depleted Below Dark Surface (A11) hydric soil indicator, while the third test pit near TP-6 did not meet any hydric soil indicator. While TP-6 did not meet all 3 criteria, the additional soil and hydrology information collected by Thurston County suggests this area might be a wetland. The only way to confirm the presence of hydric soils would be to conduct an alphaalpha dipyridyl test in the spring. Therefore, without having conducted the alpha-alpha dipyridyl test, we will conservatively assume the area represented by TP-6 is wetland, identified as Wetland C until an alpha-alpha dipyridyl test confirms otherwise.

TP-7 was located south of the property in a tract for the Broomwood Subdivision in an area dominated by big-leaf maple (*Acer macrophyllum*), willow (*Salix* sp.), and Himalayan blackberry. Vegetation within TP-7 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-4 inches) was a very dark gray (10YR 3/1) silt loam. Soil in the second layer (4-11 inches) was a very dark gray (10YR 3/1) silt loam with 1% brown (7.5YR 4/4) redoximorphic concentrations in the matrix. Soil in the third layer was dark brown (10YR 35/3) silt loam with 20% dark yellowish brown (10YR 4/6) redoximorphic concentrations in the matrix. The soils did not meet any hydric soil indicator; therefore, the hydric soil criterion was not met. No primary or secondary wetland hydrology indicators were observed; thus, the



wetland hydrology criterion was not met. Since TP-7 did not meet all 3 criteria, the area represented by TP-7 is not a wetland.

TP-8 was located south of TP-6 and north of TP-4 in an area dominated by red alder, Douglas spirea, lady fern, and slough sedge. Vegetation within TP-8 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-5 inches) was a very dark grayish brown (10YR 3/2) silt loam. Soil in the second layer (5-16 inches) was a brown (10YR 4/3) silt loam a with 5% yellowish brown (10YR 5/6) redoximorphic concentrations in the matrix. The soils did not meet any hydric soil indicator; therefore, the hydric soil criterion was not met. During an April 2023 site visit by Thurston County, inundation was observed in this area (H. Tschaekofske, email dated July 6, 2023). During the October 2022 site visit, no wetland hydrology indicators were observed in this area. However, during the May 2023 site visit by Confluence, 1 primary wetland hydrology indicator-Water-Stained Leaves (B9)-and 1 secondary indicator – FAC-Neutral Test (D5) – were observed. The presence of at least 1 primary or 2 secondary indicators meets the wetland hydrology criterion. The wetland hydrology indicators observed in April and May 2023 indicate that water is present during some portions of the growing season. However, it is unclear if that water is present for a sufficient amount of time for hydric soil to develop. While TP-8 did not meet all 3 criteria, the additional hydrology information collected by Thurston County suggests this area might be a wetland. The only way to confirm the presence of hydric soils would be to conduct an alphaalpha dipyridyl test in the spring. Therefore, without having conducted the alpha-alpha dipyridyl test, we will conservatively assume the area represented by TP-8 is wetland, identified as Wetland BC until an alpha-alpha dipyridyl test confirms otherwise.

TP-9 is located north of TP-8 in an area dominated by red alder, western red-cedar, salal, lady fern, and sword fern. Vegetation within TP-9 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-11 inches) was a very dark grayish brown (10YR 3/2) loam. Soil in the second layer (11-14 inches) was a dark grayish brown (10YR 4/2) silt loam. Soil in the third layer (14-16+ inches) was a dark grayish brown (10YR 4/2) silt loam. Soil in the third layer (14-16+ inches) was a dark grayish brown (10YR 4/2) silt loam with 5% yellowish brown (10YR 5/6) redoximorphic concentrations in the matrix. The soils did not meet any hydric soil indicator; therefore, the hydric soil criterion was not met. No primary or secondary wetland hydrology indicators were observed; thus, the wetland hydrology criterion was not met. Since TP-9 did not meet all 3 criteria, the area represented by TP-9 is not a wetland.

TP-10 is located northwest of TP-9 in an area dominated by red alder, beaked hazelnut (*Corylus cornuta*), and deer fern (*Blechnum spicant*). Vegetation within TP-10 passed the Dominance Test and therefore met the wetland vegetation criterion. Soil in the top layer (0-11 inches) was a very dark grayish brown (10YR 3/2) loam. Soil in the second layer (11-15 inches) was a dark grayish brown (10YR 4/2) silt loam. The soils did not meet any hydric soil indicator; therefore, the hydric soil criterion was not met. No primary or secondary wetland hydrology indicators were



observed; thus, the wetland hydrology criterion was not met. Since TP-10 did not meet all 3 criteria, the area represented by TP-10 is not a wetland.

#### 3.3 Wetlands

TP-1 and TP-5represented an area on the subject property that met all 3 wetland criteria, identified as Wetland A. TP-6 and TP-8 represented areas that are conservatively assumed at this time to be wetlands based on additional soil and hydrology information collected by Thurston County, as discussed in Section 3.2. These areas are therefore identified as Wetlands B and C. One additional off-site wetland within 300 feet of the subject property was identified from the property line. These wetlands are described in detail below, summarized in Table 1, and shown on Figure 2.

			Wetland Rating				
Wetland Name	Cowardin Classification <sup>1</sup>	Size (square feet) <sup>2</sup>	Water Quality	Hydrology	Habitat	Total	Category
Wetland A	Palustrine forested	15,292	8	5	4	17	III
Wetland B	Palustrine forested	579	8	4	3	15	IV
Wetland C	Palustrine forested	3,116	7	4	3	14	IV
Off-Site Wetland	Palustrine emergent, palustrine unconsolidated bottom	3,191	7	4	3	14	IV <sup>3</sup>
<ul> <li><sup>1</sup> FGDC 2013</li> <li><sup>2</sup> The sizes of both Wetland A and the off-site wetland are approximate.</li> <li><sup>3</sup> The rating of the off-site wetland was estimated.</li> </ul>							

#### Table 1. Wetland summary

#### 3.3.1 Wetland A

Wetland A is located in the western half of the property and extends off-site to the south. The wetland is approximately 15,292 square feet. The off-site boundary of Wetland A was approximated using site observations, elevation data, and aerial imagery (Thurston County 2022). TP-1 and TP-5, described above in Section 3.2, represent Wetland A. Hydrologic inputs to Wetland A are dominated by groundwater and precipitation.

According to the Cowardin classification system (FGDC 2013), Wetland A is a forested wetland. Dominant vegetation in Wetland A includes western red-cedar, red alder, salmonberry, slough sedge, and lady fern. The boundary of Wetland A was determined by a distinct topographic break, evidence of standing water, and the vegetative shift to non-hydrophytic vegetation (e.g, sword fern, evergreen huckleberry, salal). According to the 2014 Wetland Rating System (Hruby 2014), Wetland A was rated as a Category III wetland, with a water quality score of 8, hydrology score of 5, and habitat score of 4.



#### 3.3.2 Wetland B

Wetland B is located north of Wetland A. The wetland is approximately 579 square feet. TP-8, described above in Section 3.2, represents Wetland B. Hydrologic inputs to Wetland B are dominated by groundwater and precipitation. As described in Section 3.2, there is some uncertainty that Wetland B meets the hydric soil criterion. For the purposes of this report, we are conservatively assuming that the soil is hydric. During the spring of 2024, an alpha-alpha dipyridyl test may be conducted to determine if Wetland B does have hydric soils. If this test is conducted and it is determined that the soil in Wetland B is not hydric, then an addendum to this report will be prepared.

According to the Cowardin classification system (FGDC 2013), Wetland B is a forested wetland. Dominant vegetation in Wetland B includes red alder, Douglas spirea, lady fern, and slough sedge. The boundary of Wetland B was determined by a distinct topographic break, evidence of standing water, and the vegetative shift to non-hydrophytic vegetation (e.g, sword fern, evergreen huckleberry, salal). According to the 2014 Wetland Rating System (Hruby 2014), Wetland B was rated as a Category IV wetland, with a water quality score of 8, hydrology score of 4, and habitat score of 3.

#### 3.3.3 Wetland C

Wetland C is located north or Wetland B. The wetland is approximately 3,116 square feet. TP-6, described above in Section 3.2, represents Wetland C. Hydrologic inputs to Wetland C are dominated by groundwater and precipitation. As described in Section 3.2, there is some uncertainty that Wetland C meets the hydric soil criterion. For the purposes of this report, we are conservatively assuming that the soil is hydric. During the spring of 2024, an alpha-alpha dipyridyl test may be conducted to determine if Wetland C does have hydric soils. If this test is conducted and it is determined that the soil in Wetland C is not hydric, then an addendum to this report will be prepared.

According to the Cowardin classification system (FGDC 2013), Wetland C is a forested wetland. Dominant vegetation in Wetland A includes red alder, western red-cedar, salmonberry, and slough sedge. The boundary of Wetland C was determined by a topographic break, evidence of standing water, and the vegetative shift to non-hydrophytic vegetation (e.g, sword fern, evergreen huckleberry, salal). According to the 2014 Wetland Rating System (Hruby 2014), Wetland C was rated as a Category IV wetland, with a water quality score of 7, hydrology score of 4, and habitat score of 3.

#### 3.3.4 Off-Site Wetland

No test plots were evaluated in the off-site wetland, located approximately 35 feet north of the property, because Confluence did not have access to the property on which this wetland was located. Though Confluence lacked access to the off-site wetland, its proximity to the property



line made it possible to observe the dominant wetland characteristics and complete a conservative rating.

According to the Cowardin classification system (FGDC 2013), the off-site wetland contains an emergent fringe with an area of open water (palustrine unconsolidated bottom). Based on site observations and a review of historical aerial imagery, the wetland was likely created as a livestock pond (Netronline 2022). The closest edge of the off-site wetland is approximately 35 feet north of the property boundary. According to the 2014 Wetland Rating System (Hruby 2014), the off-site wetland was conservatively rated as a Category IV wetland, with a water quality score of 7, hydrology score of 4, and a habitat score of 3.

#### 3.4 Fish and Wildlife Habitat Conservation Areas

Per TCC 24.03, Thurston County defines fish and wildlife conservation areas (FWHCAs) as areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. These also include locally important habitats and species. Confluence did not identify any streams or other FWHCAs on or within 300 feet of the subject property.



#### 4.0 REGULATORY IMPLICATIONS

Per TCC 24.30.045, the county specifies wetland buffer widths for both habitat and water quality protection. The larger of the 2 buffer widths is the designated buffer width for the wetland. The overall rating of the wetland does not factor into the assigned buffer width. According to TCC 24.30.045, the following standard buffers apply:

- Wetland A has a habitat score of 4 and a water quality score of 8. The wetland does not meet the criteria associated with the water quality buffers and therefore the habitat buffer width of 140 feet applies.
- Wetland B has a habitat score of 3 and a water quality score of 8. The wetland does not meet the criteria associated with the water quality buffers and therefore the habitat buffer width of 120 feet applies.
- Wetland C has a habitat score of 3 and a water quality score of 7. The wetland does not meet the criteria associated with the water quality buffers and therefore the habitat buffer width of 120 feet applies.
- The off-site wetland was conservatively rated with a habitat score of 3 and a water quality score of 7. While the wetland meets the criteria for the 50-foot water quality buffer, the habitat buffer of 100 feet is larger and therefore applies as the standard buffer. Since the wetland is approximately 35 feet from the subject property, the buffer of the off-site wetland encroaches a maximum of 65 feet onto the property.



#### 5.0 BUFFER IMPACT AVOIDANCE

The project proposes to use buffer reduction—using the mitigation measures shown in TCC 24.30.050, Table 24.30-2—in conjunction with buffer reconfiguration—as allowed under TCC 24.30.060—to avoid wetland buffer impacts.

To avoid impacts to the buffers of Wetlands A, B and C, the mitigation measures shown in TCC 24.30.050, Table 24.30-2 will be implemented. The civil site plans document when and how the mitigation measures will be implemented. Implementation of TCC 24.30.050 would result in the following buffer widths:

- Wetland A reduced buffer of 105 feet (75% of 140 feet)
- Wetland B reduced buffer of 90 feet (75% reduction of 120 feet)
- Wetland C reduced buffer of 90 feet (75% reduction of 120 feet)

All of these buffers are larger than the 50-foot water quality buffer described in TCC 23.30.045. The reduced buffer areas do not need enhancement because the forested buffer has a thick, multilayered, and diverse understory. In addition, there is large woody debris throughout the buffer. Combined, these characteristics provide filtration of sediments, excess nutrients, and pollutants; flood storage; erosion control; moderation of stormwater impacts; and shading.

In addition, to ensure there is no net loss of buffer function from the proposed reduction, the project includes adding 20,780 square feet of buffer to the west side of Wetland A, which will ensure there is no net loss of buffer area despite buffer reduction, as allowed under TCC 23.30.050, reducing the buffer by 20,780 square feet.

A portion of the proposed buffer reduction area is currently in agricultural use and the remainder in a forested condition. The proposed addition area is entirely forested with a thick, multilayered, diverse, and healthy understory and therefore will provide greater buffer function than the proposed reduction area.

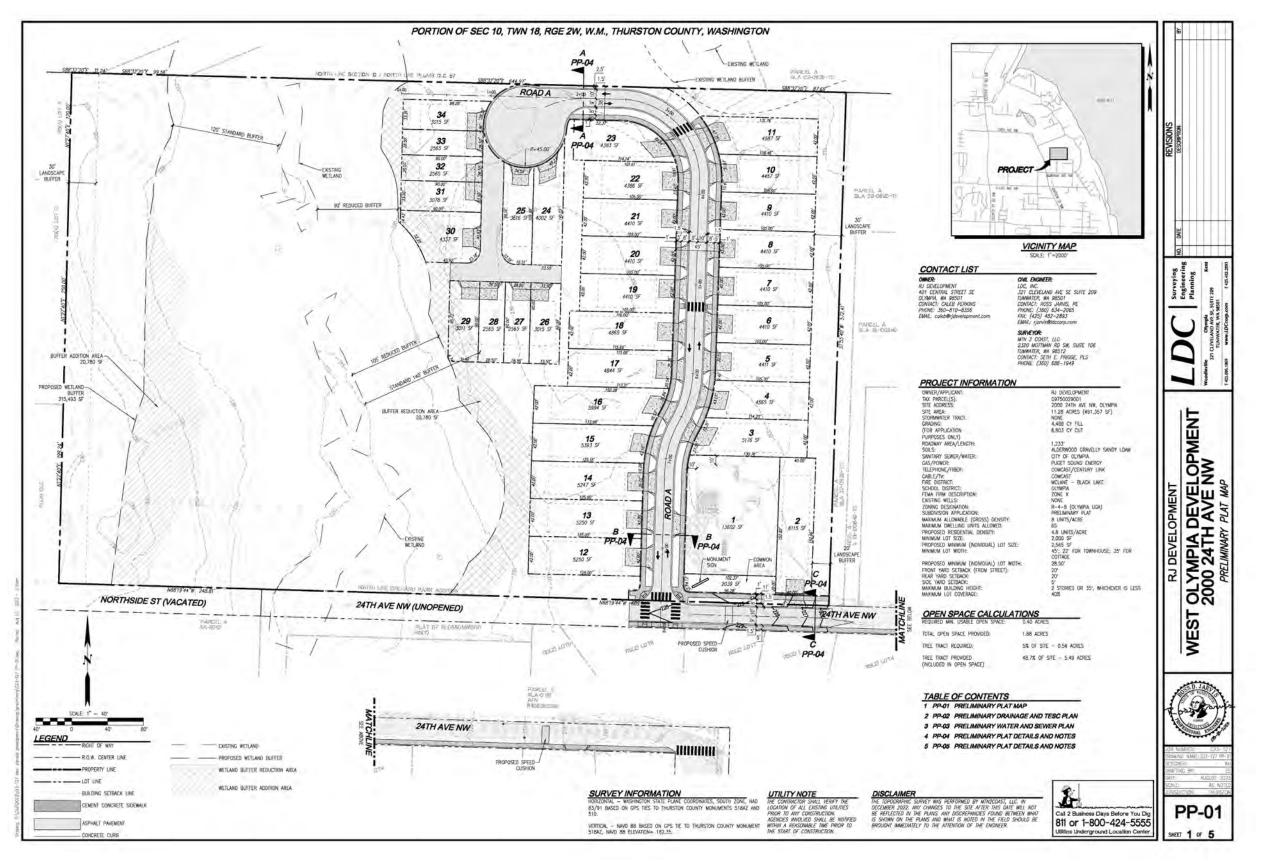


Figure 3. Wetlands and proposed buffer reconfiguration





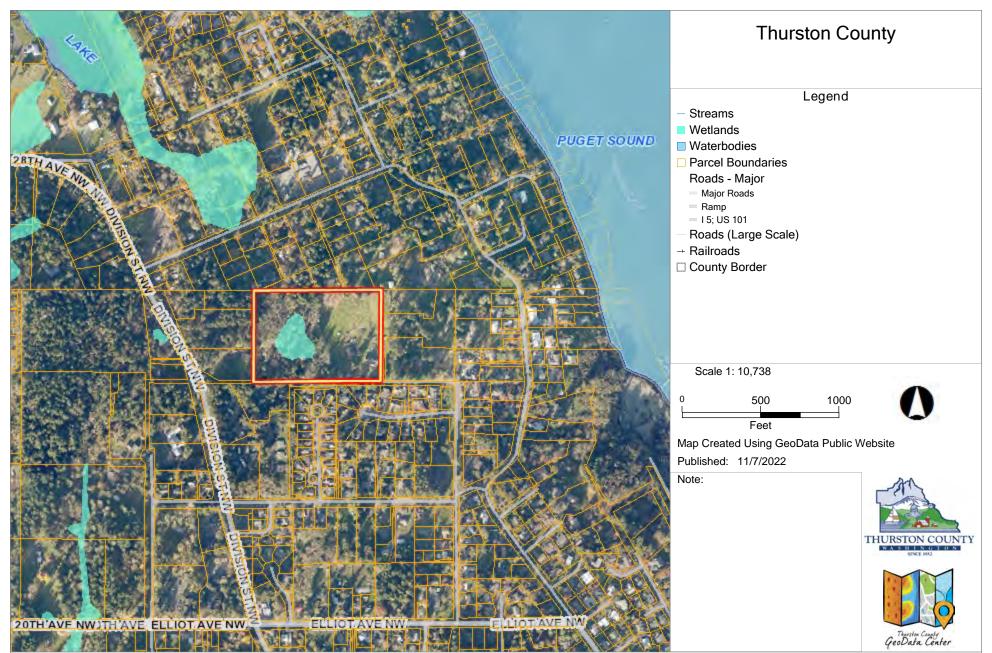
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Appendix A GIS Database Search Results



The information included on this map has been compiled by Thurston County staff from a variety of sources and is subject to change without notice. Additional elements may be present in reality that are not represented on the map. Ortho-photos and other data may not align. The boundaries depicted by these datasets are approximate. This document is not intended for use as a survey product. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. Thurston County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. In no event shall Thurston County be liable for direct, indirect, indirect, incidental, consequential, special, or tot damages of any kind, including, but not limited by low to list profits, real or anticipated, resulting from the use, misuse or reliance of the information contained on this map. If any portion of this map or disclaimer is missing or altered, Thurston County removes itself from all responsibility from the user and the user is solely responsible for understanding the accuracy limitation of the information ontained within. The burden for determining fitness for use lies entirely with the user and the user is solely responsible for understanding the accuracy limitation of the information ontained in this map. Authorized for 3rd Party reproduction for personal use only.



## U.S. Fish and Wildlife Service National Wetlands Inventory

NWI



#### November 7, 2022

#### Wetlands

- atuaria a and Marine M/s
- Estuarine and Marine Wetland

Estuarine and Marine Deepwater

Freshwater Pond

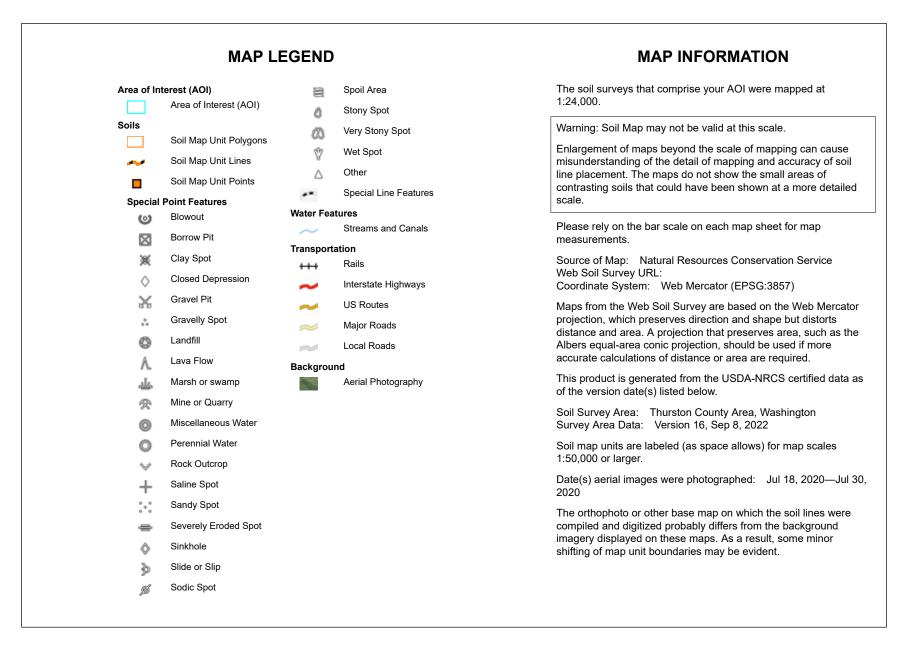
Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Lake Other Riverine This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



USDA Natural Resources Conservation Service Web Soil Survey National Cooperative Soil Survey



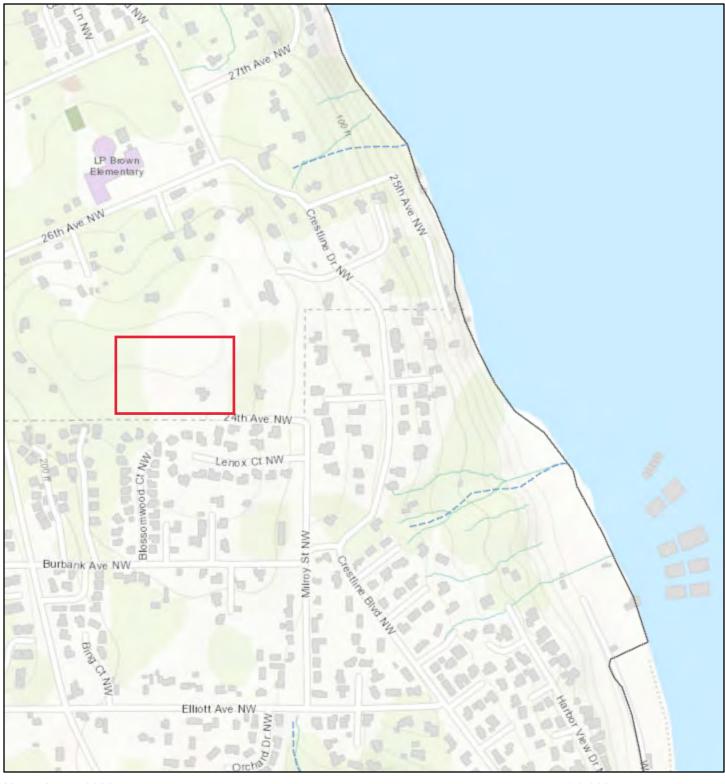
USDA

## Map Unit Legend

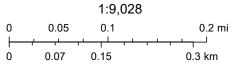
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Alderwood gravelly sandy loam, 8 to 15 percent slopes	9.9	86.4%
3	Alderwood gravelly sandy loam, 15 to 30 percent slopes	1.6	13.6%
Totals for Area of Interest	1	11.4	100.0%



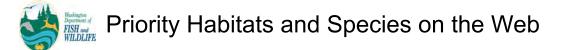
## SalmonScape



November 7, 2022



City of Olympia, Bureau of Land Management, Esri Canada, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, METI/NASA, EPA, USDA, USGS/NHD, Dale Gombert (WDFW), WDFW





#### Report Date: 11/07/2022, Parcel ID: 09750029001

## PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Yuma myotis	N/A	N/A	Yes
Little Brown Bat	N/A	N/A	Yes
Big brown bat	N/A	N/A	Yes

#### PHS Species/Habitats Details:

Yuma myotis	
Scientific Name	Myotis yumanensis
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Ν
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Little Brown Bat	
Scientific Name	Myotis lucifugus
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Ν
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Big brown bat	
Scientific Name	Eptesicus fuscus
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Ν
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

#### Forest Practices Activity Map - Application #\_



## Legend

- Map Registration Tics
- ★ Water Type Breaks (FP)
- Type S
- Туре F
- Type N, Np, Ns
- U, unknown
- X, non-typed per WAC 222-16
- 40 ft. Contours
- – Trail
- --- Railroad
- ⊨ Railroad Grade

- Paved Road
   Unpaved Road/Surface
   Unknown
   Abandoned
  - Orphaned

÷

- Other Impoundments
- Open Freshwater
- Subject to Inundation
  - Glacier / Snowfield
- Wet Area
  - Open Saltwater
- Artificial Feature

- Tribal Cultural Resource Contacts
- **County Boundaries**
- Fire Shutdown Zones
- SOSEA Boundaries
  - WRIA Boundaries
  - WAUs

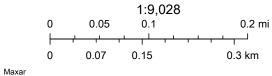
- Public Land Survey Sections
- Public Land Survey Townships
- County Tax Parcels

## WA Wetlands of High Conservation Value



11/7/2022, 3:32:22 PM

Counties



# Appendix B Wetland Delineation Methods

## 2000 24th Avenue NW Revised Critical Areas Study: Appendix B CONFLUENCE ENVIRONMENTAL COMPANY WETLAND DELINEATION METHODS

Prepared by:

Confluence Environmental Company 2023



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3.0	REFER	ENCES	.4		



This appendix describes the methods used to confirm the presence or absence of wetlands in a study area.

#### 1.0 METHODOLOGIES

Confluence delineates the boundaries of wetlands using the "Routine Determinations for Areas Less Than 5 Acres in Size" method described by the U.S. Army Corps of Engineers (Corps) in the Corps of Engineers Wetlands Delineation Manual (Delineation Manual; Corps 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Regional Supplement; Corps 2010). The Regional Supplement was part of a nationwide effort to address regional wetland characteristics and improve the accuracy and efficiency of wetland-delineation procedures. The Regional Supplement uses the best available science to address regional differences in climate, geology, soils, hydrology, and plant and animal communities that cannot be addressed in a single national document, such as the Delineation Manual. The Regional Supplement was designed for use with the 1987 Delineation Manual and all subsequent versions. Where differences in the 2 documents occur, the Regional Supplement takes precedence over the 1987 Delineation Manual (Corps 2010). The Regional Supplement was developed to clarify the indicators of hydrophytic vegetation, hydric soils, and wetland hydrology found in the region (these indicators are discussed in detail in Section 2.0). It is important to note that areas that may have been determined to be wetlands under the 1987 Delineation Manual may not be determined to be wetlands under the Regional Supplement, and vice versa.

Confluence uses the PLANTS Database (NRCS 2022) for scientific names and the 2020 National Wetland Plant List (Corps 2020) to determine the wetland indicator status of plants. Wetlands are classified using the Cowardin Classification System (FGDC 2013). Confluence determines the wetland rating using Washington State Department of Ecology's Wetland Rating System for Western Washington (Hruby 2014). The National Wetland Inventory is also researched to determine if wetlands have previously been identified on the property (USFWS 2022).

The locations of test plots, soil cores, and wetland edges on a project property are recorded using a differential Global Positioning System with sub-meter accuracy. Delineated and surveyed wetland boundaries are subject to verification and approval by jurisdictional agencies.

#### 2.0 WETLAND CRITERIA

There is specific technical language that applies to the study of wetlands. This section briefly explains the language Confluence uses in its wetland delineation reports.

The identification of wetlands is based on 3 criteria: hydrophytic vegetation, hydric soils, and hydrology. Each criterion has a number of indicators that can be used to determine whether the criterion has been met. The Corps, which is the federal authority on the regulation of wetlands,



has developed the guidance and the data form that are the standards used in all wetland determinations. The information presented below is based on their Delineation Manual (Corps 1987) and Regional Supplement (Corps 2010).

In order to confirm the presence of a wetland, data are collected from representative test plots chosen within and outside of a potential wetland. The test plots are representative of particular vegetative, topographic, and hydrologic features in the vicinity. Within the test plots particular data (see sections below) about vegetation, soils, and hydrology are collected to determine whether wetland characteristics are present. Plots that meet all 3 wetland criteria are wetland plots; plots that do not meet all 3 wetland criteria are upland (i.e., nonwetland) plots. The test plots (along with topographic and vegetative shifts) then inform the delineation of wetland boundaries.

#### 2.1 Hydrophytic Vegetation

Vegetation is often the first visual cue that an area is a wetland. Similarly, vegetation often also signals the shift from wetland to upland. The question regarding plants to be answered when performing a wetland delineation is, "Is the vegetation hydrophytic?" That is, is the vegetation of the variety that is adapted to live in wetter-than-average conditions? To determine the answer, there are a few resources and steps to follow. First, the indicator status for each plant present in the test plot is determined from the National Wetland Plant List (Corps 2020). The indicator status is a continuum from almost exclusively occurring in wetlands (obligate wetland plants, or OBL) to almost never occurring in wetlands (obligate upland plants, or UPL). The middle ground between those 2 extremes is known as a facultative plant (or FAC), which is found equally in wetland and upland environments. The FAC category has 2 further gradations: facultative upland plants (FACU), which are plants that are usually found in uplands, and facultative wetland plants (FACW), which are plants that are usually found in wetlands.

After the status of each plant species in the test plot has been determined, the hydrophytic vegetation indicators can be applied. The application of the indicators is performed sequentially, and once one is "passed," the box for hydrophytic vegetation is checked, and the process continues to the next criterion. The first hydrophytic vegetation indicator is the "Rapid Test," which means with a quick visual survey, all the plants in the test plot are either OBL or FACW. The second test is the "Dominance Test." For the Dominance Test, the total number of dominant species in the test plot is divided by the number of species that are OBL, FACW, or FAC. The resulting percentage must be greater than 50 to pass this test. The third test is the "Prevalence Index." The Prevalence Index is a weighted average of the absolute cover of all the plant species present in the plot, regardless of dominance. There are also 2 other, less common, indicators: morphological adaptations (e.g., buttressed trunks) and nonvascular plant species (e.g., sphagnum moss).



#### 2.2 Hydric Soils

The soils tell the story about the presence of water over time. The National Technical Committee defines a hydric soil as, "A soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA Soil Conservation Service 1994). The question to be answered here is, "Has water been present long enough and recently enough to form hydric soils?" In order to examine the soil characteristics, a test pit must be dug, usually to about 18 inches. A sliver of soil from the test pit is extracted with a shovel (i.e., the soil profile) to examine the layers. The thickness, color, texture, redoximorphic features, and any other interesting information about each layer are observed and recorded. Those features are described more fully below.

- **Thickness.** Layers are measured to the nearest inch. Usually, each soil profile has at least 2 layers.
- Color. Color is determined by comparison to a color chart. The industry standard is the Munsell Soil-Color Chart, which assigns each color a designation for hue, value, and chroma (e.g., 10YR 3/2, where 10YR=hue, 3=value, and 2=chroma).

#### More Hydric Soils Definitions (adapted from Corps 2010)

*Matrix*: the dominant soil volume in a given soil layer

*Depleted Matrix*: the volume of a soil horizon in which soil processes have removed or transformed iron, creating colors of low chroma and high value, specifically:

- Value ≥5, chroma = 1, with or without redoximorphic features
- Value ≥6, chroma = 1 or 2, with or without redoximorphic features
- Value of 4 or 5, chroma =2, ≥2% distinct or prominent redoximorphic features
- Value of 4, chroma =1, ≥2% distinct or prominent redoximorphic features

*Distinct*: readily seen, but contrasting\* moderately with comparison color

*Prominent*: readily seen and contrasting\* greatly with comparison color

\*See Corps 2010, Table A1, page 130 for full key on contrast determinations.

- **Texture.** The precision of texture description for the purpose of wetland delineation is at a general scale. The Washington State University texture chart (Cogger 2010) is often used, but the delineator just needs to determine if the soil is sandy or loamy/clayey.
- **Redoximorphic Features.** The most common redoximorphic features are concentrations or depletions of iron in the soil matrix. Concentrations occur as red or yellow deposits, and depletions occur as grayish deposits.

When the soil profile is fully described, it can be determined whether any of the layers meets a hydric soil indicator. The presence of any hydric soil indicator signifies a hydric soil, although a soil may be hydric and not meet any of these indicators. There are 19 hydric soil indicators in our region, 2 of which were observed at the site (Corps 2010). Additional hydric soil terminology definitions are in the sidebar.



- A11—Depleted Below Dark Surface. A soil layer with a depleted matrix, with 60% or more chroma of ≤2, which starts within 12 inches of the surface and is at least 6 inches thick. Layers above the depleted layer must have a value ≤3, and a chroma ≤2.
- **F6**—**Redox Dark Surface.** A soil layer at least 4 inches thick, entirely within the upper 12 inches of the soil with:
  - matrix value ≤3, chroma ≤1, and 2% or more distinct or prominent redoximorphic concentrations, or
  - matrix value ≤3, chroma ≤2, and 5% or more distinct or prominent redoximorphic concentrations.

#### 2.3 Hydrology

Wetland hydrology is the broadest criterion and has to do with signs of saturation and inundation in the test plot. While hydrophytic vegetation and hydric soils are the result of hydrology, they remain even during the dry season, whereas wetland hydrology can be less apparent or absent during the dry season. The hydrology indicators are broad enough to encompass characteristics that may be present even during the dry season. Hydrology indicators are in 4 groups:

- Group A is based on direct observation of surface or ground water.
- Group B consists of evidence that the site is subject to inundation.
- Group C consists of other evidence that soil is or was saturated.
- Group D consists of landscape, vegetation, and soil characteristics indicating contemporary wet conditions.

The indicators are further divided into 2 categories: primary and secondary. A test plot must have either 1 primary or 2 secondary indicators to pass the hydrology criterion. Primary and secondary indicators observed during this delineation are recorded on the wetland delineation data forms in Appendix C.

#### 3.0 REFERENCES

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# Appendix C Wetland Delineation Data Forms

ject/Site: 2000 24 Ave N/M	City/County	mpin Muston sampling Date 10/251
licant/Owner RJDevelopmen	-	State.
estigator(s): KAMINAD	Section, Township.	Range () [ [ [ ] ]
dform (hillslope, terrace, etc.):	Level relief (concer	va convex none) con character shops in the
pregion (LRR):	Lat: 47, 06 756 /	V_ Long 122. 92691 W Datum (196)
Map Unit Name: Alder WOOd	I avaially rands	10 g Minu classification ABMR
climatic / hydrologic conditions on the site typ	North March March March North North March North March North March 1990	(IT NO, explain in residence)
calmatic / hydrologic conditions on the site typ	Ical for this time of year's roo	are "Normal Circumstances" present? Yes No
Vegetation, Soil, or Hydrology		If needed, explain any answers in Remarks.)
Vegetation, Soil, or Hydrology	naturally problematic?	important features, etc
JMMARY OF FINDINGS - Attach si	te map showing sampling poin	nt locations, transects, important features, etc
ydrophytic Vegetation Present? Yes	No	
	No Is the Samp within a We	No.
Vetland Hydrology Present? Yes _	No	
emarks: Duereast Irainy - poor 1k	auting for coloring so	15
svereas frankling in the ran	Idn atober Ro	ain began a couple days 1
Unisvally warm,	do	Jik wsit.
GETATION – Use scientific names		or Dominance Test worksheet:
ree Stratum (Plot size: 30')	Absolute Dominant Indicate % Cover Species? Status	Number of Dominant Species
red alder	95 V FAL	
w. red ledar	S FAC	
		Species Across All Strata: (B)
		Percent of Dominant Species / DO (A/B)
	100 = Total Cover	That Are OBL, FACW, of FAC.
Sapling/Shrub Stratum (Plot size: 15	- IS V FAC	Prevalence Index worksheet:
Salmon berny	IS V FAC	Total % Cover of:         Multiply by:           OBL species         x 1 =
Him. blackborry	IS FALL	OBL species         x1 =           FACW species         x2 =
Dispirea		FAC species x 3 =
		FACU species x 4 =
-1	45 = Total Cover	UPL species x 5 =
terb Stratum (Plot size:)	3 FAL	(A) (B)
no the cody hedge	HD V DR.	Prevalence Index = B/A =
Slough Serlic	25 V OK	Hydrophytic Vegetation Indicators:
Skunkcabbage	25 - FAC	1 - Rapid Test for Hydrophytic Vegetation
porsetail	I FAL	
I di serias		3 - Prevalence Index is ≤3.01
		4 - Morphological Adaptations' (Provide supporting
L		data in Remarks or on a separate sheet)
		5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
0		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1		be present, unless disturbed or problematic.
Noody Vine Stratum (Plot size: 51	DD = Total Cover	
Noody Vine Stratum (Plot size:		Hydrophytic
2		Vegetation
5	= Total Cover	Present? Yes No
% Bare Ground in Herb Stratum		

	ription: (Describe	to the day	th needed to door	ment the li	adicator	or confirm	n the absence of indica	tors.)
Depth	Matrix	to the dep				01 001111		
inches)	Color (moist)	%	Color (moist)	%	Type'	Loc <sup>2</sup>	Texture	Remarks
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-9	1040711	90	INIA ILL	7.	D	M	CIHUCHUI	nn
	1-11-611	10	10412 411	-7	-	41	anging	
· · · · ·			104R 416		0	M		
+14+	2545/2	90	104R416	10	C	M	Chy loam	
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					_			
-							21 11 11 11	=Pore Lining, M=Matrix,
ype C=C	oncentration, D=Dep	pletion, RM	=Reduced Matrix, C	S=Covered	or Coate	ed Sand Gi	rains. Location: PL	blematic Hydric Soils <sup>3</sup> :
	Indicators: (Applic	able to al			ed.)		2 cm Muck (A	
_ Histosol			Sandy Redox (				Red Parent M	aterial (TF2)
Black H	bipedon (A2) stic (A3)		Stripped Matrix	(SB)	) (excer	MIRA	Very Shallow	Dark Surface (TF12)
	n Sulfide (A4)		Loamy Mucky Loamy Gleyed			(MERAI)	Other (Explain	in Remarks)
Depleter	d Below Dark Surfac	e (A11)	Depleted Matri					
_ Thick Da	ark Surface (A12)		Redox Dark Su				<sup>3</sup> Indicators of hydro	ophytic vegetation and
_ Sandy N	Aucky Mineral (S1)		Depleted Dark	Surface (F)	7)		wetland hydrold	gy must be present,
	Bleyed Matrix (S4)		Redox Depress	sions (F8)		-	unless disturbe	d or problematic
	Layer (if present):							-
Type:								
								Mar Ma
	ches):		-				Hydric Soil Present?	Yes No
remarks:	GY		_				Hydric Soil Present?	Yes <u></u> No
Contraction of the second seco	GY drology Indicators:		d check all that app					Yes No
COROLO	GY drology Indicators: cators (minimum of c				as (B9) (e	xcept	Secondary Indic	ators (2 or more required)
COROLO Vetland Hydrimary India Surface	GY drology Indicators: zators (minimum of o Water (A1)		Water-Sta	ined Leave		xcept	Secondary Indic	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2,
COROLO Vetland Hydrimary India Surface High Wa	GY drology Indicators: cators (minimum of c Water (A1) tter Table (A2)		Water-Sta MLRA	ined Leave 1, 2, 4A, a		xcept	Secondary Indic Water-Stain 4A, and	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2,
COROLO Vetland Hydrimary India Surface High Wa Saturatio	GY drology Indicators: cators (minimum of c Water (A1) iter Table (A2) on (A3)		Water-Sta MLRA Salt Crust	ined Leave 1, 2, 4A, a	nd 4B)	xcept	Secondary Indic Water-Stain 4A, and Drainage Pa	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B)
CDROLO Vetland Hydrimary India Surface High Wa Saturatia Water M	GY drology Indicators: cators (minimum of c Water (A1) ter Table (A2) on (A3) arks (B1)		Water-Sta MLRA Salt Crust	ined Leave 1, 2, 4A, an (B11)	nd 4B)	xcept	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2)
CDROLO Vetland Hydrimary India Surface High Wa Saturatia Water M Sedimen	GY drology Indicators: cators (minimum of c Water (A1) tter Table (A2) on (A3) arks (B1) tt Deposits (B2)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Leave 1, 2, 4A, an (B11) vertebrates	nd 4B) s (B13) or (C1)		Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2)
VDROLO Vetland Hydrimary India Surface High Wa Saturatio Water M Sedimer Drift Dep	GY drology Indicators: cators (minimum of c Water (A1) ther Table (A2) on (A3) iarks (B1) nt Deposits (B2) posits (B3)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence	ined Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od Rhizosphere of Reduced	nd 4B) 6 (B13) for (C1) res along d Iron (C4	Living Roo	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V ts (C3) Geomorphic Shallow Aqu	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9 : Position (D2) uitard (D3)
VDROLO Vetland Hydrimary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma	GY drology Indicators: cators (minimum of c Water (A1) ter Table (A2) on (A3) iarks (B1) nt Deposits (B2) posits (B3) tt or Crust (B4)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Inc	(B11) vertebrates Sulfide Od Rhizosphen of Reduced	nd 4B) s (B13) lor (C1) es along d Iron (C4 on in Tille	Living Roo I) d Soils (C6	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V ts (C3) Geomorphic Shallow Aqu FAC-Neutra	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) risible on Aerial Imagery (C9) Position (D2) attard (D3) I Test (D5)
VDROLO Vetland Hyu rimary Indio Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Spil Cracks (B6)	one require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Inc Stunted o	ined Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od Rhizosphere of Reduced on Reduction r Stressed F	nd 4B) (B13) (or (C1) es along d Iron (C4 on in Tille Plants (D	Living Roo I) d Soils (C6	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V ts (C3) Geomorphic Shallow Aqu FAC-Neutra Raised Ant	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9 : Position (D2) uitard (D3) I Test (D5) Mounds (D6) (LRR A)
Verland Hy Verland Hy rimary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) ti Deposits (B2) posits (B3) ti or Crust (B4) posits (B5) Spil Cracks (B6) on Visible on Aerial	one require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o 7) Other (Ex	ined Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od Rhizosphere of Reduced on Reduction r Stressed F	nd 4B) (B13) (or (C1) es along d Iron (C4 on in Tille Plants (D	Living Roo I) d Soils (C6	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V ts (C3) Geomorphic Shallow Aqu FAC-Neutra Raised Ant	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) fisible on Aerial Imagery (C9 : Position (D2) uitard (D3) I Test (D5)
VDROLO Vetland Hydrimary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	GY drology Indicators: zators (minimum of c Water (A1) ther Table (A2) on (A3) arks (B1) arks (B1) th Deposits (B2) posits (B3) art or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I Vegetated Concave	one require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o 7) Other (Ex	ined Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od Rhizosphere of Reduced on Reduction r Stressed F	nd 4B) (B13) (or (C1) es along d Iron (C4 on in Tille Plants (D	Living Roo I) d Soils (C6	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V ts (C3) Geomorphic Shallow Aqu FAC-Neutra Raised Ant	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9 : Position (D2) uitard (D3) I Test (D5) Mounds (D6) (LRR A)
VDROLO Vetland Hydrimary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	GY drology Indicators: cators (minimum of of Water (A1) iter Table (A2) on (A3) arks (B1) it Deposits (B2) oosits (B3) it or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial I Vegetated Concave rations:	Imagery (B e Surface (	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o 7) Other (Ex 88)	ined Leave 1, 2, 4A, ar (B11) vertebrates Sulfide Od Rhizosphern of Reduced on Reduction r Stressed F plain in Rer	nd 4B) s (B13) for (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Roo ) d Soils (C6 1) (LRR A)	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V ts (C3) Geomorphic Shallow Aqu FAC-Neutra Raised Ant	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9) : Position (D2) uitard (D3) I Test (D5) Mounds (D6) (LRR A)
Vetland Hyd rimary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely eld Observ	GY drology Indicators: cators (minimum of of Water (A1) ther Table (A2) on (A3) arks (B1) th Deposits (B2) posits (B3) th or Crust (B4) posits (B5) Spil Cracks (B6) on Visible on Aerial I Vegetated Concave rations: ar Present? Y	Imagery (B e Surface	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o 7) Other (Ex B8)	ined Leave 1, 2, 4A, ar (B11) vertebrates Sulfide Od Rhizosphern of Reduced on Reduction r Stressed F plain in Rer ches):	nd 4B) s (B13) for (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Roo I) d Soils (C6 1) (LRR A)	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V ts (C3) Geomorphic Shallow Aqu FAC-Neutra Raised Ant	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9) : Position (D2) uitard (D3) I Test (D5) Mounds (D6) (LRR A)
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YDROLO Yetland Hyu Trimary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Surface Inundatio Sparsely ield Observ urface Wate later Table aturation Pr	GY drology Indicators: ators (minimum of of Water (A1) ther Table (A2) on (A3) arks (B1) ht Deposits (B2) oosits (B3) th or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial I Vegetated Concave rations: ar Present? Y esent? Y	Imagery (E e Surface ( es es es	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o Other (Ex B8) No Depth (in No Depth (in No Depth (in	ined Leave 1, 2, 4A, au (B11) vertebrates Sulfide Od Rhizospheri of Reducedon Reduction r Stressed F plain in Rer ches): ches):	nd 4B) s (B13) for (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Roo () d Soils (C6 1) (LRR A)	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V Shallow Aqu Shallow Aqu FAC-Neutra Raised Ant Frost-Heave	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9) : Position (D2) aitard (D3) I Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
YDROLO Yetland Hyu Trimary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Surface Inundatio Sparsely ield Observ urface Wate later Table aturation Pr	GY drology Indicators: ators (minimum of of Water (A1) riter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I vegetated Concave vations: ar Present? Y esent? Y	Imagery (E e Surface ( es es es	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o Other (Ex B8) No Depth (in No Depth (in No Depth (in	ined Leave 1, 2, 4A, au (B11) vertebrates Sulfide Od Rhizospheri of Reducedon Reduction r Stressed F plain in Rer ches): ches):	nd 4B) s (B13) for (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Roo () d Soils (C6 1) (LRR A)	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V Shallow Aqu Shallow Aqu FAC-Neutra Raised Ant Frost-Heave	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9) : Position (D2) aitard (D3) I Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
YDROLO Yetland Hyu trimary India Surface High Wa Saturatio Water M Sedimer Algal Ma Iron Dee Surface Inundatio Sparsely field Obsern urface Wate later Table aturation Pr noludes cap escribe Rec	GY drology Indicators: ators (minimum of of Water (A1) ther Table (A2) on (A3) arks (B1) ht Deposits (B2) oosits (B3) th or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial I Vegetated Concave rations: ar Present? Y esent? Y	Imagery (E e Surface ( es es es	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o Other (Ex B8) No Depth (in No Depth (in No Depth (in	ined Leave 1, 2, 4A, au (B11) vertebrates Sulfide Od Rhizospheri of Reducedon Reduction r Stressed F plain in Rer ches): ches):	nd 4B) s (B13) for (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Roo () d Soils (C6 1) (LRR A)	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V Shallow Aqu Shallow Aqu FAC-Neutra Raised Ant Frost-Heave	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9) : Position (D2) aitard (D3) I Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
Primary India Primary India Surface High Wa Saturation Water M Sedimer Algal Ma Iron Dep Surface Inundation Sparsely ield Observior urface Water Vater Table aturation Primary Semantic States Semantic States Se	GY drology Indicators: ators (minimum of of Water (A1) ther Table (A2) on (A3) arks (B1) ht Deposits (B2) oosits (B3) th or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial I Vegetated Concave rations: ar Present? Y esent? Y	Imagery (E e Surface ( es es es	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o Other (Ex B8) No Depth (in No Depth (in No Depth (in	ined Leave 1, 2, 4A, au (B11) vertebrates Sulfide Od Rhizospheri of Reducedon Reduction r Stressed F plain in Rer ches): ches):	nd 4B) s (B13) for (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Roo () d Soils (C6 1) (LRR A)	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V Shallow Aqu Shallow Aqu FAC-Neutra Raised Ant Frost-Heave	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9) : Position (D2) aitard (D3) I Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)
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YDROLO Yetland Hyu trimary India Surface High Wa Saturatio Water M Sedimer Algal Ma Iron Dee Surface Inundatio Sparsely field Obsern urface Wate later Table aturation Pr noludes cap escribe Rec	GY drology Indicators: ators (minimum of of Water (A1) ther Table (A2) on (A3) arks (B1) ht Deposits (B2) oosits (B3) th or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial I Vegetated Concave rations: ar Present? Y esent? Y	Imagery (E e Surface ( es es es	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o Other (Ex B8) No Depth (in No Depth (in No Depth (in	ined Leave 1, 2, 4A, au (B11) vertebrates Sulfide Od Rhizospheri of Reducedon Reduction r Stressed F plain in Rer ches): ches):	nd 4B) s (B13) for (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Roo () d Soils (C6 1) (LRR A)	Secondary Indic Water-Stain 4A, and Drainage Pa Dry-Season Saturation V Shallow Aqu Shallow Aqu FAC-Neutra Raised Ant Frost-Heave	ators (2 or more required) ed Leaves (B9) (MLRA 1, 2, 4B) atterns (B10) Water Table (C2) /isible on Aerial Imagery (C9) : Position (D2) aitard (D3) I Test (D5) Mounds (D6) (LRR A) e Hummocks (D7)

WETLAND DETERMINATION	DATA FORM – Western Mo	untains, Valleys, and Coast Region
Project/Site: 2000 24th Ave NW	man Mu	npia Thurston sampling Date 10/25/22
	City/County: City/	State: MA Sampling Point TP-2
Applicant/Owner: KT Deve lapment Investigator(s): KAM (NAB		ADDR: STT TIAN RZW
	Section, Township, R	
Landform (hillslope, terrace, etc.):	Local relief (concave	Long: 122. 92681° Datum WGS 84
Subregion (LRR):	_ Lat: 47.00755 M	am (8 NWI classification: none
Soil Map Unit Name: Alder wood gra		
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 No
Are Vegetation, Soil, or Hydrology		eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site ma	p showing sampling point	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes Vegetation Present? Yes Vegetation Present?	No Is the Samplewithin a Wetla	
Wetland Hydrology Present? Yes	No	
Remarks: Unusually dry 1	warm october arre days un	r. kain just started a
LITER BUILT COM		4 10 Mic white
VEGETATION – Use scientific names of pla		Dominance Test worksheet:
Tree Stratum (Plot size:)	Absolute Dominant Indicator % Cover Species? Status	Number of Dominant Species
1. red alder	100 × FAC	That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant 7
3		Species Across All Strata (B)
4	00	Percent of Dominant Species 57% (A/B)
Sapling/Shrub Stratum (Plot size: 1.5 )	100 = Total Cover	
1 So P mm berry	10 V FAC	Prevalence Index worksheet: Total % Cover of: Multiply by:
2 Everareen huckleberry	20 V PACU	Total % Cover of: Multiply by: OBL species x 1 =
sved elderberny	5 FACH	FACW species x 2 =
4		FAC species $175 \times 3 = 52J$
5	1.0	FACU species 75 x 4 = 300
51	<u>DS</u> = Total Cover	UPL species x 5 =
Herb Stratum (Plot size:)	40 r FACH	Column Totals: 250 (A) 825 (B)
2Norsetail	40 V FAC	Prevalence Index = B/A = 3.3
3 any fern	5 FAC	Hydrophytic Vegetation Indicators:
4.		1 - Rapid Test for Hydrophytic Vegetation
5		2 - Dominance Test is >50%
6		3 - Prevalence Index is ≤3.0 <sup>1</sup>
7		<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
8		5 - Wetland Non-Vascular Plants1
10		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	= Total Cover	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)	rotal Cover	
1-parling blackberry	20 V MC	Hydrophytic
28.104	10 - Hu	Vegetation Present? Yes No
0	= Total Cover	NO
% Bare Ground in Herb Stratum		
		sep met dominance test
but tailed prev. Induct	wertan ug, but	transitional vos.

<u>Texture</u> <u>Remarks</u> SIH loam SIH loam
silt loan
SI It loam
<u>SI IF IOAM</u>
<u></u>
ains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils <sup>3</sup> :
2 cm Muck (A10)
Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
Other (Explain in Remarks)
a second second
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present,
unless disturbed or problematic.
unces distances of presidentials
Hydric Soil Present? Yes No
Consider Indicators (2 or more required)
<u>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)
Saturation Visible on Aerial Imagery (C9
ots (C3) Geomorphic Position (D2)
Shallow Aguitard (D3)
FAC-Neutral Test (D5)
) Raised Ant Mounds (D6) (LRR A)
Frost-Heave Hummocks (D7)
and Hydrology Present? Yes No
if available:
i available.

oject/site: 2000 24th Ave NW	City/County Oly	mpia Thurston sampling Date 10/25/22
plicant/Owner: KT Doweloomer	at	State: INA Sampling Point:
restigator(s): KAM& MAD	Conting Township	, Range: SSF. T. T. BN RZW
-	Section, Township	ave, convex, none): Concasse. Slope (%): O
ndform (hillslope, terrace, etc.):	Local relier (conc	AL Long 122. 92(267 Datum WGS)
bregion (LRR): A		Colty (100) 102100
Il Map Unit Name: Alderwood G	pravelly survey	
e climatic / hydrologic conditions on the site typical f		Are "Normal Circumstances" present? Yes No
Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances" present 7 (cs 100
Vegetation, Soil, or Hydrology	Hardenand) prove	(If needed, explain any answers in Remarks.)
JMMARY OF FINDINGS – Attach site m	nap showing sampling poi	nt locations, transects, important features, et
ydrophytic Vegetation Present? Yes		
	No. 1 Is the Sam	
/etland Hydrology Present? Yes	within a W	
emarks	warm actobe	r. Rain just stand a
couple days pr	or to site vi	SIT.
GETATION – Use scientific names of p	plants.	
2121	Absolute Dominant Indica	
w. red Cedar	% Cover Species? Statu	S Number of Dominant Species (A)
red a der	100 V FR	
Co a mer		Total Number of Dominant Z (B)
		Percent of Dominant Species C7
101	130 = Total Cover	That Are OBL, FACW, or FAC: (A/B
apling/Shrub Stratum (Plot size: _/S)	2 KAL	Prevalence Index worksheet:
E. huckleberry	- 30 - FAL	Total % Cover of: Multiply by:
Salmonberry	- 10 - FAC	OBL species x 1 =
Indian plum'	<u>Price</u>	FACW species x 2 =
		FAC species x 3 =
	K = Total Cover	FACU species x 4 =
erb Stratum (Plot size:)	000 00	UPL species x 5 = (B)
Slovel Sedee	_ 25 V 0131	Column Totals: (A) (B)
Jady tem	FHC	Prevalence Index = B/A =
Susontein	LEO FALL	C Hydrophytic Vegetation Indicators:
		1 - Rapid Test for Hydrophytic Vegetation
		_ ∠ 2 - Dominance Test is >50% _ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
		<ul> <li>4 - Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
		5 - Wetland Non-Vascular Plants <sup>1</sup>
		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	90 = Total Cover	be present, unless disturbed of problematic.
oody Vine Stratum (Plot size)	12 - FALL	
manne manage		- Hydrophytic Vegetation
	10 = Total Cover	Present? Yes No
()PC		
Bare Ground in Herb Stratum		

one beau	iption: (Describe i	to the depth	needed to document the indicator or co	
epth	Matrix		Redox Features	2 Texture Remarks
nches)	Color (moist)		Color (moist) % Type1 Lo	C TOALOIS
-10	104R 212	100 _		- SI It laam
2-12+	104R 4/4	100_		- Sitt loam
ype: C=Co	ncentration, D=Dep	letion, RM=R	Reduced Matrix, CS=Covered or Coated Sa	nd Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
			RRs, unless otherwise noted.)	Indicators for Problematic Hydric Solis :
_ Histosol	(A1)	_	_ Sandy Redox (S5)	2 cm Muck (A10)
	ipedon (A2)	_	_ Stripped Matrix (S6)	Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
_ Black Hit		-	Loamy Mucky Mineral (F1) (except MLF	(Trial Conternation of the content o
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Other (Explain in Kennanka)
	Below Dark Surface	e (A11) _	Depleted Matrix (F3) Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and
_	lucky Mineral (S1)	-	Depleted Dark Surface (F7)	wetland hydrology must be present,
	leyed Matrix (S4)	-	Redox Depressions (F8)	unless disturbed or problematic.
and the second se	ayer (if present):			
Туре:				
				No. 10 March Mar
	thes):			Hydric Soil Present? Yes No
emarks: (DROLO	GY			Hydric Soll Present? Yes No
YDROLO	GY frology Indicators:		check all that apoly)	Hydric Soil Present? Yes No
YDROLO Vetland Hyd	GY drology Indicators: ators (minimum of o			Secondary Indicators (2 or more required)
YDROLO Vetland Hyd rimary Indic Surface	GY drology Indicators: ators (minimum of o Water (A1)		Water-Stained Leaves (B9) (excep	Secondary Indicators (2 or more required) t Water-Stained Leaves (B9) (MLRA 1,
PROLO Vetland Hyd rimary Indic Surface High Wa	GY drology Indicators: :ators (minimum of o Water (A1) ter Table (A2)		Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) t Water-Stained Leaves (B9) (MLRA 1,
emarks: (DROLO) /etland Hyd rimary Indic Surface High Wa Saturatio	GY frology Indicators: sators (minimum of o Water (A1) ter Table (A2) on (A3)		Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Secondary Indicators (2 or more required) t Water-Stained Leaves (B9) (MLRA 1,
PROLO Vetland Hyd rimary Indic Surface High Wa Saturatic Water M	GY frology Indicators: ators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1)		Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) t Water-Stained Leaves (B9) (MLRA 1,
emarks: /DROLO /etland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer	GY frology Indicators: ators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2)		Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Secondary Indicators (2 or more required)         t
emarks: DROLO Vetland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep	GY frology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3)		Water-Stained Leaves (B9) (excep     MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)	Secondary Indicators (2 or more required)         t
emarks: DROLO Vetland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	GY frology Indicators: ators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) at Deposits (B2) posits (B3) tt or Crust (B4)		Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil	Secondary Indicators (2 or more required)         t
emarks: (DROLO) /etland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	GY trology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3) tt or Crust (B4) posits (B5)		Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction In Tilled Soil     Stunted or Stressed Plants (D1) (Li	Secondary Indicators (2 or more required)         t
emarks: (DROLO /etland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii	GY trology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3) ot or Crust (B4) rosits (B5) Soil Cracks (B6) on Visible on Aerial I	me required; magery (B7)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction In Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks)	Secondary Indicators (2 or more required)         t
emarks: (DROLO /etland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii	GY trology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3) et or Crust (B4) rosits (B5) Soil Cracks (B6)	me required; magery (B7)	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction In Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks)	Secondary Indicators (2 or more required)         t
emarks: /DROLO /etland Hyd rimary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatid Sparsely	GY trology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3) et or Crust (B4) rosits (B5) Soil Cracks (B6) on Visible on Aerial I r Vegetated Concave vations:	magery (B7) a Surface (B8	Water-Stained Leaves (B9) (excep MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks)	Secondary Indicators (2 or more required)         t
YDROLO Vetland Hyd mmary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii	GY trology Indicators: eators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) posits (B3) tor Crust (B4) rosits (B5) Soil Cracks (B6) on Visible on Aerial I vegetated Concave vations: er Present? Y	magery (B7) a Surface (B8	Water-Stained Leaves (B9) (excep     MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil     Stunted or Stressed Plants (D1) (L1     Other (Explain in Remarks) }      Depth (inches):	Secondary Indicators (2 or more required)         t
Permarks: PROLO Vetland Hyd Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii Sparsely ield Obsern burface Wate	GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: ar Present? Y	magery (B7) a Surface (B8 es No es No	Water-Stained Leaves (B9) (excep     MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks)      Depth (inches):     Depth (inches):	Secondary Indicators (2 or more required)         t
Provide a construction of the second	GY trology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Y Present? Y resent? Y	magery (B7) a Surface (B8 es No es No es No es No	Water-Stained Leaves (B9) (excep     MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks) )      Depth (inches):     Depth (inches):	Secondary Indicators (2 or more required)         t
Verland Hyd Verland Hyd Seurface High Wa Saturatio Water M Sedimer Orift Dep Algal Ma Iron Dep Surface Inundatii Sparsely ield Obsen Surface Wate Vater Table Saturation Pr ncludes cap Describe Red	GY trology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Y Present? Y resent? Y	magery (B7) a Surface (B8 es No es No es No es No	Water-Stained Leaves (B9) (excep     MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks)     Depth (inches):     Depth (inches):     Depth (inches):	Secondary Indicators (2 or more required)         t
YDROLO Yotland Hyu Yotland Hyu Yotland Hyu Yotland Hyu Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Sparsely Sield Obsern Surface Water Vater Table Saturation Pri Saturation	GY trology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Y Present? Y resent? Y	magery (B7) a Surface (B8 es No es No es No es No	Water-Stained Leaves (B9) (excep     MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks)     Depth (inches):     Depth (inches):     Depth (inches):	Secondary Indicators (2 or more required)         t
YDROLO Vetland Hyd mimary Indig Surface High Wa Saturatio Water M Sedimer Orift Dep Algal Ma ron Dep Surface Inundatii Sparsely field Obsen Surface Water Vater Table Saturation Pr includes cap Describe Red	GY trology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Y Present? Y resent? Y	magery (B7) a Surface (B8 es No es No es No es No	Water-Stained Leaves (B9) (excep     MLRA 1, 2, 4A, and 4B)     Salt Crust (B11)     Aquatic Invertebrates (B13)     Hydrogen Sulfide Odor (C1)     Oxidized Rhizospheres along Living     Presence of Reduced Iron (C4)     Recent Iron Reduction in Tilled Soil     Stunted or Stressed Plants (D1) (Li     Other (Explain in Remarks)     Depth (inches):     Depth (inches):     Depth (inches):	Secondary Indicators (2 or more required)         t

oject/Site 2000 24th Are NEW plicant/owner: RS Development	¢	ity/County Jarri	Dia Muston Sampling Date: 10/25/2 State: 12A Sampling Point: 1P-4
			ange: 557 TI.8N RZW
restigator(s): <u>KAM/NAD</u>	S	ection, Township, Ri	ange: _) > T if to the store (%)
ndform (hillslope, terrace, etc.):	L	ocal relief (concave,	convex, none): Concave Slope (%): Long: /22, 9272/ Curr (UGS)
bregion (LRR):	Lat: 4+.	DLatas - N	Long:/dd I startinger) Datum was
il Map Unit Name: Alder Wood 9	vavelly	sandy c	NWI classification
e climatic / hydrologic conditions on the site typical for		? Yes No	(If no, explain in Remarks.)
e Vegetation, Soil, or Hydrology			"Normal Circumstances" present? Yes No
e Vegetation, Soil, or Hydrology			eeded, explain any answers in Remarks.)
JMMARY OF FINDINGS - Attach site ma	p showing s	ampling point	locations, transects, important features, e
	No		
lydric Soil Present? Yes	NO	Is the Sampleo	
Vetland Hydrology Present? Yes	No_	within a Wetla	nd? Yes No
emarks:	1 1.01	Do to La	paine ist to ded a
musually warm	ary	OCTO BEY	. Rains just started a
couple days p		to site	MJIT.
GETATION – Use scientific names of pla	ants.		
ree Stratum (Plot size: 30 1 )	Absolute I	Dominant Indicator Species? Status	Dominance Test worksheet:
red alder	0 -	V PAC	Number of Dominant Species 3 (A) That Are OBL, FACW, or FAC:
			Total Number of Dominant
			Species Across All Strata:
			Percent of Dominant Species 25
151	80 =	Total Cover	That Are OBL, FACW, or FAC: (A
apling/Shrub Stratum (Plot size: //	20	ER	Prevalence Index worksheet:
Salmonberg	- 25-	V FACU	Total % Cover of: Multiply by:
		- ingen	OBL species x 1 =
			FACW species x 2 =
6			FAC species x 3 =
	45 =	Total Cover	FACU species         x 4 =           UPL species         x 5 =
erb Stratum (Plot size:)	(D))	- DA	UPL species         x 5 =         (A)         (E)           Column Totals:         (A)         (E)         (E)
day h sedge		r oa	
superatern		1-ACH	Prevalence Index = B/A =
			Hydrophytic Vegetation Indicators:
			Rapid Test for Hydrophytic Vegetation     2 - Dominance Test is >50%
			3 - Prevalence Index is ≤3.0 <sup>1</sup>
			4 - Morphological Adaptations <sup>1</sup> (Provide supporti
			data in Remarks or on a separate sheet)
			5 - Wetland Non-Vascular Plants <sup>1</sup>
4 <u></u>			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
the state (Bistoire ST	<u> 40</u> = 1	Total Cover	the process, where a distanced of progenetic.
oody Vine Stratum (Plot size:)			Underschudig
			Hydrophytic Vegetation
	-0 =1	Fotal Cover	Present? Yes No
and a second sec			
Bare Ground in Herb Stratum			

Profile Desc	cription: (Describe	to the depth	needed to docur	ment the inc	dicator or o	confirm	the ab	sence of Indi	icators.)		
Depth	Matrix			x Features							
(inches)	Color (moist)	%		%	Type 1	.0C <sup>2</sup>	Text	lure	F	Remarks	
2-4	104R 2/21	100				_	Silt	loan			
-4+	104R 32	80	Sector and the sector of the s	a designed			sitt	loam			
	104R413	20					SIH	loam			
	- 112	<u></u>	1	-			311	Ingeri		1	
								<sup>2</sup> Location:	DI =Dore	Lining Ma	=Matrix
vdric Soil	oncentration, D=Dep Indicators: (Applic	oletion, RM=R	educed Matrix, CS	S=Covered o	or Coated S	and Gra	lins.	dicators for F	Problema	atic Hydri	Soils":
Histosol					.)			_ 2 cm Muck			
	pipedon (A2)	-	Sandy Redox (S Stripped Matrix				_	Red Parent	Material	(TF2)	
	Istic (A3)	-	Loamy Mucky M		(except ML	RA 1)	-	Very Shallo	w Dark S	Surface (TF	12)
Hydroge	en Sulfide (A4)	_	Loamy Gleyed I				-	Other (Expl	ain in Re	marks)	
_ Deplete	d Below Dark Surfac	e (A11)	Depleted Matrix	(F3)					1.00		
	ark Surface (A12)	-	_ Redox Dark Sur					dicators of hy			
	Mucky Mineral (S1)	-	_ Depleted Dark S					wetland hydrounless disturt			ent,
	Gleyed Matrix (S4) Layer (if present):		_ Redox Depress	ions (F8)		-		uniess distur	bed of pr	obiematic.	and the second
	Layer (if present):										
Type:											
	cheel						Hydrig	- Soil Presen	t? Yes	5	No
Depth (in Remarks:			_				Hydrid	c Soil Presen	t? Yes	5	No
Depth (in Remarks: YDROLO Vetland Hy	GY drology Indicators:										
Depth (in Remarks: YDROLO Vetland Hy rimary India	GY drology Indicators: cators (minimum of o							Secondary Inc	dicators (	2 or more	required)
Depth (in Remarks: YDROLO Vetland Hy, rimary India Surface	GY drology Indicators: cators (minimum of o Water (A1)		Water-Stain	ned Leaves		ot		Secondary Inc	dicators (	2 or more	
Depth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa	GY drology Indicators: cators (minimum of o Water (A1) ater Table (A2)		Water-Stain MLRA 1	ned Leaves ( I, 2, 4A, and		pt		Secondary Inc Water-Sta 4A, an	dicators ( ained Lea ad 4B)	2 or more aves (B9) (	required)
Pepth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatio	rGY drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3)		Water-Stain MLRA 1 Salt Crust (	ned Leaves ( 1, 2, 4A, and (B11)	i 4B)	pt		Secondary Inc Water-Sta 4A, an Drainage	dicators ( ained Lea aid <b>4B)</b> Patterns	<u>2 or more</u> aves (B9) ( (B10)	required) MLRA 1, 2,
Pepth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M	rGY drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1)		Water-Stain MLRA 1 Salt Crust ( Aquatic Inv	ned Leaves ( <b>1, 2, 4A, and</b> (B11) vertebrates (B	<b>1 4B)</b> B13)	ot		Secondary Inc Water-Sta 4A, an Drainage Dry-Seaso	dicators ( ained Lea d <b>4B)</b> Patterns on Water	2 or more aves (B9) ( (B10) r Table (C2	required) MLRA 1, 2, 2)
Pepth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M Sedimen	GY drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2)		Water-Stain MLRA Salt Crust ( Aquatic Inv Hydrogen S	ned Leaves ( I, 2, 4A, and (B11) rertebrates (E Sulfide Odor	B13) (C1)			Secondary Ing Water-Sta 4A, an Drainage Dry-Sease Saturatior	dicators ( ained Lea d <b>4B)</b> Patterns on Water a Visible o	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I	required) MLRA 1, 2, 2)
Depth (in Remarks: YDROLO Vetland Hy Primary India Saturatio Water M Sedimer Drift Dep	GY drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) tarks (B1) ht Deposits (B2) posits (B3)		Water-Stain MLRA 1 Salt Crust ( Aquatic Inv Hydrogen 5 Oxidized R	ned Leaves ( I, 2, 4A, and (B11) rertebrates (E Sulfide Odor hizospheres	<b>i 4B)</b> B13) (C1) along Livin			Secondary Inc Water-Sta 4A, an Drainage Dry-Seasu Saturation Geomorpi	dicators ( ained Lea ad 4B) Patterns on Water n Visible hic Positi	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2)	required) MLRA 1, 2, 2)
Depth (in Remarks: YDROLO Vetland Hy Primary Indis Saturation Satu	GY drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		Water-Stair MLRA Salt Crust ( Aquatic Inv Hydrogen S Oxidized R Presence o	ned Leaves ( I, 2, 4A, and (B11) rertebrates (f Sulfide Odor hizospheres of Reduced In	<b>i 4B)</b> B13) (C1) along Livin ron (C4)	g Roots		Secondary Inc Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorpi Shallow A	dicators ( ained Lea ad <b>4B)</b> Patterns on Water h Visible hic Positi Aquitard (	2 or more aves (B9) ( (B10) Table (C2 on Aerial I ion (D2) D3)	required) MLRA 1, 2, 2)
Depth (in Remarks: YDROLO Vetland Hy Primary India Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	GY drology Indicators: cators (minimum of c Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		Water-Stair MLRA Salt Crust ( Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror	ned Leaves ( I, 2, 4A, and (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In a Reduction i	a 4B) B13) (C1) along Livin ron (C4) in Tilled Sol	ils (C6)	(C3)	Secondary Inc Water-Sta 4A, an Drainage Dry-Seass Saturation Geomorpi Shallow A FAC-Neul	dicators ( ained Lea ad 4B) Patterns on Water hic Positi Aquitard ( tral Test	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I lon (D2) D3) (D5)	required) MLRA 1, 2, 2) magery (C9
Depth (in Remarks: YDROLO Vetland Hy, Yrimary Indig Surface High Wa Saturatid Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	<u>ne required; (</u>	Water-Stair MLRA Salt Crust ( Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iror Stunted or	ned Leaves ( <b>J. 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In h Reduction i Stressed Pla	t 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L	ils (C6)	(C3)	Secondary Inc Water-Sta 4A, an Drainage Dry-Seasu Saturatior Geomorpi Shallow A FAC-Neut Raised Ar	dicators ( ained Lea ad 4B) Patterns on Water hic Positi Aquitard ( tral Test at Mound	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I lon (D2) D3) (D5) ls (D6) (LF	required) MLRA 1, 2, 2) magery (C9
Depth (in Remarks: YDROLO Vetland Hy, Yrimary India Saturatia Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatia	drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I	me required; ( magery (B7)	Water-Stair MLRA 1 Salt Crust ( Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iror Stunted or Other (Expl	ned Leaves ( <b>J. 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In h Reduction i Stressed Pla	t 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L	ils (C6)	(C3)	Secondary Inc Water-Sta 4A, an Drainage Dry-Seass Saturation Geomorpi Shallow A FAC-Neul	dicators ( ained Lea ad 4B) Patterns on Water hic Positi Aquitard ( tral Test at Mound	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I lon (D2) D3) (D5) ls (D6) (LF	required) MLRA 1, 2, 2) magery (C9
Depth (in Remarks: YDROLO Vetland Hy Primary India Saurface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii Sparsely	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave	me required; ( magery (B7)	Water-Stair MLRA 1 Salt Crust ( Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iror Stunted or Other (Expl	ned Leaves ( <b>J. 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In h Reduction i Stressed Pla	t 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L	ils (C6)	(C3)	Secondary Inc Water-Sta 4A, an Drainage Dry-Seasu Saturatior Geomorpi Shallow A FAC-Neut Raised Ar	dicators ( ained Lea ad 4B) Patterns on Water hic Positi Aquitard ( tral Test at Mound	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I lon (D2) D3) (D5) ls (D6) (LF	required) MLRA 1, 2, 2) magery (C9 RR A)
Depth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely ield Obsert	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations:	magery (B7) s Surface (B8)	Water-Stair MLRA 1 Salt Crust ( Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iror Stunted or Other (Expl	ned Leaves ( <b>1, 2, 4A, and</b> (B11) rertebrates (f Sulfide Odor hizospheres of Reduced Ir n Reduction i Stressed Pla lain in Rema	1 4B) B13) (C1) along Livin ron (C4) in Tilled Sol ants (D1) (L irks)	ils (C6)	(C3)	Secondary Inc Water-Sta 4A, an Drainage Dry-Seasu Saturatior Geomorpi Shallow A FAC-Neut Raised Ar	dicators ( ained Lea ad 4B) Patterns on Water hic Positi Aquitard ( tral Test at Mound	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I lon (D2) D3) (D5) ls (D6) (LF	required) MLRA 1, 2, 2) magery (C9 RR A)
Depth (in Remarks: YDROLO Vetland Hy Primary India Saurface High Wa Saturatii Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii Sparsely ield Obsern urface Wate	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present?	magery (B7) s Surface (B8)	Water-Stair     MLRA 1     Salt Crust (     Aquatic Inv     Hydrogen 3     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl )     Depth (inc	ned Leaves ( <b>1, 2, 4A, and</b> (B11) vertebrates (f Sulfide Odor hizospheres of Reduced Ir a Reduction i Stressed Pla lain in Rema hes)	1 4B) B13) (C1) along Livin ron (C4) in Tilled Sol ants (D1) (L urks)	ils (C6)	(C3)	Secondary Inc Water-Sta 4A, an Drainage Dry-Seasu Saturatior Geomorpi Shallow A FAC-Neut Raised Ar	dicators ( ained Lea ad 4B) Patterns on Water hic Positi Aquitard ( tral Test at Mound	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I lon (D2) D3) (D5) ls (D6) (LF	required) MLRA 1, 2, 2) magery (C9 RR A)
Depth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatii Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatii Sparsely ield Obsern urface Water	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Present? Y	magery (B7) e Surface (B8) 7 / és No es No	Water-Stair     MLRA 1     Salt Crust (     Aquatic Inv     Hydrogen 3     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl )     Depth (inc	hed Leaves ( <b>1, 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced Ir n Reduction i Stressed Pla lain in Rema hes): hes):	1 4B) B13) (C1) along Livin ron (C4) in Tilled Sol ants (D1) (L urks)	ig Roots ils (C6) RR A)	(C3)	Secondary Inc Water-Sta 4A, an Drainage Dry-Seasu Saturatior Geomorpi Shallow A FAC-Neut Raised Ar Frost-Hea	dicators ( ained Lea ad <b>4B</b> ) Patterns on Water hic Positi Aquitard ( tral Test int Mound ave Humm	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2) D3) (D5) Is (D6) (LF mocks (D7	required) MLRA 1, 2, 2) magery (C9 RR A) )
Depth (in Remarks: YDROLO Vetland Hyr Primary India Surface High Wa Saturation Water M Saturation Unift Dep Algal Ma Iron Dep Surface Inundation Sparsely ield Obsern unface Water Vater Table Saturation Pri	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Present? Yi Present? Yi Present? Yi Present? Yi	magery (B7) 9 Surface (B8) 7 * es No es No es No	Water-Stain     MLRA     Salt Crust (     Aquatic Inv     Hydrogen S     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl      Depth (inc	ned Leaves ( <b>I, 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In n Reduction i Stressed Pla lain in Rema hes): hes):	1 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L irks)	g Roots ils (C6) RR A) Wetlan	c (C3)	Secondary Ing Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorpi Shallow A FAC-Neut Raised Ar Frost-Hea	dicators ( ained Lea ad <b>4B</b> ) Patterns on Water hic Positi Aquitard ( tral Test int Mound ave Humm	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2) D3) (D5) Is (D6) (LF mocks (D7	required) MLRA 1, 2, 2) magery (C9 RR A)
Depth (in Remarks: YDROLO Vetland Hyr Trimary India Surface High Wa Saturation Water M Saturation Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely ield Obsern urface Water Vater Table Sturation Pri Surface Cart	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Present?	magery (B7) 9 Surface (B8) 7 * es No es No es No	Water-Stain     MLRA     Salt Crust (     Aquatic Inv     Hydrogen S     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl      Depth (inc	ned Leaves ( <b>I, 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In n Reduction i Stressed Pla lain in Rema hes): hes):	1 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L irks)	g Roots ils (C6) RR A) Wetlan	c (C3)	Secondary Ing Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorpi Shallow A FAC-Neut Raised Ar Frost-Hea	dicators ( ained Lea ad <b>4B</b> ) Patterns on Water hic Positi Aquitard ( tral Test int Mound ave Humm	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2) D3) (D5) Is (D6) (LF mocks (D7	required) MLRA 1, 2, 2) magery (C9 RR A) )
Depth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely iteld Obsern Surface Water Vater Table Saturation Principles Cap Rescribe Rec	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Present? Yi Present? Yi Present? Yi Present? Yi	magery (B7) 9 Surface (B8) 7 * es No es No es No	Water-Stain     MLRA     Salt Crust (     Aquatic Inv     Hydrogen S     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl      Depth (inc	ned Leaves ( <b>I, 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In n Reduction i Stressed Pla lain in Rema hes): hes):	1 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L irks)	g Roots ils (C6) RR A) Wetlan	c (C3)	Secondary Ing Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorpi Shallow A FAC-Neut Raised Ar Frost-Hea	dicators ( ained Lea ad <b>4B</b> ) Patterns on Water hic Positi Aquitard ( tral Test int Mound ave Humm	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2) D3) (D5) Is (D6) (LF mocks (D7	required) MLRA 1, 2, 2) magery (C9 RR A) )
Depth (in Remarks: YDROLO Vetland Hyr Primary India Surface High Wa Saturation Vater M Sedimer Drift Dep Algal Ma Sedimer Drift Dep Surface Inundation Sparsely Viteld Obsern Surface Water Vater Table	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Present? Yi Present? Yi Present? Yi Present? Yi	magery (B7) 9 Surface (B8) 7 * es No es No es No	Water-Stain     MLRA     Salt Crust (     Aquatic Inv     Hydrogen S     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl      Depth (inc	ned Leaves ( <b>I, 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In n Reduction i Stressed Pla lain in Rema hes): hes):	1 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L irks)	g Roots ils (C6) RR A) Wetlan	c (C3)	Secondary Ing Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorpi Shallow A FAC-Neut Raised Ar Frost-Hea	dicators ( ained Lea ad <b>4B</b> ) Patterns on Water hic Positi Aquitard ( tral Test int Mound ave Humm	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2) D3) (D5) Is (D6) (LF mocks (D7	required) MLRA 1, 2, 2) magery (C9 RR A) )
Depth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely iteld Obsern Surface Water Vater Table Saturation Principles Cap Rescribe Rec	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Present? Yi Present? Yi Present? Yi Present? Yi	magery (B7) 9 Surface (B8) 7 * es No es No es No	Water-Stain     MLRA     Salt Crust (     Aquatic Inv     Hydrogen S     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl      Depth (inc	ned Leaves ( <b>I, 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In n Reduction i Stressed Pla lain in Rema hes): hes):	1 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L irks)	g Roots ils (C6) RR A) Wetlan	c (C3)	Secondary Ing Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorpi Shallow A FAC-Neut Raised Ar Frost-Hea	dicators ( ained Lea ad <b>4B</b> ) Patterns on Water hic Positi Aquitard ( tral Test int Mound ave Humm	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2) D3) (D5) Is (D6) (LF mocks (D7	required) MLRA 1, 2, 2) magery (C9 RR A) )
Depth (in Remarks: YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely iteld Obsern Surface Water Vater Table Saturation Principles Cap Rescribe Rec	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Present? Yi Present? Yi Present? Yi Present? Yi	magery (B7) 9 Surface (B8) 7 * es No es No es No	Water-Stain     MLRA     Salt Crust (     Aquatic Inv     Hydrogen S     Oxidized R     Presence o     Recent Iror     Stunted or     Other (Expl      Depth (inc	ned Leaves ( <b>I, 2, 4A, and</b> (B11) rertebrates (E Sulfide Odor hizospheres of Reduced In n Reduction i Stressed Pla lain in Rema hes): hes):	1 4B) B13) (C1) along Livin ron (C4) in Tilled Soi ants (D1) (L irks)	g Roots ils (C6) RR A) Wetlan	c (C3)	Secondary Ing Water-Sta 4A, an Drainage Dry-Sease Saturation Geomorpi Shallow A FAC-Neut Raised Ar Frost-Hea	dicators ( ained Lea ad <b>4B</b> ) Patterns on Water hic Positi Aquitard ( tral Test int Mound ave Humm	2 or more aves (B9) ( (B10) r Table (C2 on Aerial I ion (D2) D3) (D5) Is (D6) (LF mocks (D7	required) MLRA 1, 2, 2) magery (C9 RR A) )

WEILAND DEIERMI	NATION DATA FOR	M – Western Mou	ntains, Valleys, and Coast Region
Project/Site: 2000 24th Ave 1	040	City/County:	AThurston Sampling Date: 5/30/23
pplicant/Owner: RJ Develor		engroundy. Otgrup	State: WA Sampling Point: TP:5
nvestigator(s): KAM 11KS		Section, Township, Ra	nge: TL&N R2W SS7
andform (hillslope, terrace, etc.); hule			convex, none): Con Car une Slope (%):
ubregion (LRR):			Long: 122,92715° W Datum: 455
oil Map Unit Name: Alderwood		1	uh .
re climatic / hydrologic conditions on the sit	- 1	J	
re Vegetation, Soil, or Hydr			'Normal Circumstances" present? Yes <u>///</u> No
re Vegetation, Soil, or Hydr			eded, explain any answers in Remarks.)
		sampling point i	ocations, transects, important features, etc
····	res V No No	is the Sampled	Area
,	res <u> </u>	within a Wetlan	
		and Alera (D)	A=FA Minush WA-7C.
~		4	
SUEVERSE Flug UN-1	converts to WA	-74 -1212 1A-1	1B->WA.7C-22A-8
EGETATION – Use scientific na	mes of plants. $10$	cuted that	7724 - 61.00 712-4 4 A 7
Tree Stratum (Plot size:)	Absolute	a da mara da sera da s	Dominance Test worksheet:
1. red alder	90	<u>Species?</u> <u>Status</u>	Number of Dominant Species 3 That Are OBL, FACW, or FAC: (A)
2			
3			Total Number of Dominant     3       Species Across All Strata:     3
4			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:	1 90	= Total Cover	That Are OBL, FACW, or FAC: (A/B)
1. D. Spirca		V FACW	Prevalence Index worksheet:
2. Elevenden bucklahues	1 3	FACU	Total % Cover of: Multiply by:
3. Sala P	.3	FACU	OBL species x 1 =
4. HBB	3	FAC	FACW species         x 2 =           FAC species         x 3 =
5			FACU species x 3
Herb Stratum (Plot size: /0')	<u> </u>	= Total Cover	UPL species          x 5 =
1. lady fern	3	FAC	Column Totals: (A) (B)
soft nish	10	V FACW	Prevalence Index = B/A =
3			Hydrophytic Vegetation Indicators:
k			1 - Rapid Test for Hydrophytic Vegetation
5			2 - Dominance Test is >50%
B			3 - Prevalence Index is ≤3.0 <sup>1</sup>
7			4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
3 9			5 - 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
11	1 13	_= Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:()			
1			Hydrophytic Vegetation
2	7)	= Total Cover	Present? Yes No
% Bare Ground in Herb Stratum	<u></u>	Total Cover	
Remarks			

#### SOIL

Sampling Point: TP. 5

Profile Desc	ription: (Describe t	to the dep	th needed to docu	ment the ir	dicator	or confirm	n the absence of indi	cators.)
Depth	Matrix	10000	Redo	x Features				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		Remarks
0-4	104R312	100		Constant of Second Across			Silt loan	
4-9	10 YR3/2	80				-	silt loam	
4-9	2.54412	20				-	Siltloam	
9-13+	IOUR GII	50%	104R5/8	50%	C	M	Siltloam	
					_			
S								
	· · · · · · · · · · · · · · · · · · ·		-					
			-	-				
		ation DM					rolan <sup>2</sup> i anotieni	Di - Dava Lialaa MaMatsiy
	ncentration, D=Depl ndicators: (Applica					a Sand G		PL=Pore Lining, M=Matrix. Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox (		,		2 cm Muck	
	pipedon (A2)		Stripped Matrix					Material (TF2)
Black His	,		Loamy Mucky	. ,	) (excep	MLRA 1)		w Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed			- /		lain in Remarks)
	Below Dark Surface	e (A11)	Depleted Matri	x (F3)				
	ark Surface (A12)		Redox Dark Su	• • •				drophytic vegetation and
	lucky Mineral (S1)		Depleted Dark		7)			rology must be present,
	ileyed Matrix (S4) ayer (if present):		Redox Depress	sions (F8)			unless distu	bed or problematic.
Type:	-ayer (ii present):							
	ches)						Hydric Soil Prese	nt? Yes No
Remarks:	511007-				_		Injune con riesen	
	pert in 8"							
( man cl	prefil (9 X							
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	ators (minimum of o	ne require	d; check all that app	ly)			Secondary Ir	dicators (2 or more required)
Surface	Water (A1)		Water-Sta	ined Leave	s (B9) (e	xcept	Water-Si	tained Leaves (B9) (MLRA 1, 2,
High Wa	iter ⊤able (A2)		MLRA	1, 2, 4A, a	nd 4B)		4A, a	nd 4B)
Saturatio	on (A3)		Salt Crust	(B11)			Drainage	e Patterns (B10)
Water M	arks (B1)		Aquatic In	vertebrates	i (B13)		Dry-Sea	son Water Table (C2)
Sedimen	nt Deposits (B2)		Hydrogen	Sulfide Od	or (C1)		Saturatio	on Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Oxidized	Rhizospher	es along	Living Ro	ots (C3) Geomor	phic Position (D2)
Algal Ma	at or Crust (B4)		Presence	of Reduced	d Iron (C	4)	Shallow	Aquitard (D3)
Iron Dep	oosits (B5)		Recent Iro	on Reductio	n in Tille	d Soils (C	6) L FAC-Nei	utral Test (D5)
Surface	Soil Cracks (B6)		Stunted o	r Stressed I	Plants (D	1) (LRR A	A) Raised A	Ant Mounds (D6) (LRR A)
Inundatio	on Visible on Aerial I	magery (B	7) Other (Ex	plain in Rer	narks)		Frost-He	ave Hummocks (D7)
	Vegetated Concave	e Surface (	B8)		_			
Field Observ			./					
Surface Wate				iches):		-		
Water Table				iches):	_			/
Saturation Pr		es	No Compute (in	iches):		_ Wet	land Hydrology Pres	ent? Yes <u> </u>
(includes cap Describe Red	corded Data (stream	gauge. m	onitoring well, aerial	photos. pre	vious ins	pections)	, if available:	
		J==_301, III		,			,	
Remarks:								

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

	City/County	in Thurston	Sampling Date: 5/30/ 5	23
Applicant/Owner: RJ Development		State: LUA	Sampling Point: TP-6	_
Investigator(s): ICAMN IKS	Section, Township, Ra	nge: TIEN RUIL	557	
Landform (hillslope, terrace, etc.): hells de		convex, none):		
Subregion (LRR): Lat:	2.06510N	Long: 122. 927	34°W Datum: WGS	14
Soil Map Unit Name: Alderwood gravelly 1	Sama	NWI classifie	cation:	
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No _	(If no, explain in F	Remarks.)	
Are Vegetation, Soil, or Hydrology significantly	v disturbed? Are '	"Normal Circumstances"	present? Yes 🔟 No _	
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If ne	eeded, explain any answe	ers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	sampling point l	ocations, transects	s, important features, e	etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No No No	Is the Sampled Area within a Wetland? Yes No
Remarks: Located N. of T	prof cin	eanin U	department and slows he people

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

Tree Stratum (Plot size: <u>30</u> ) 1. yed aldov 2. Lo yed Codav 3.	Absolute <u>% Cover</u> <u>70</u> <u>30</u>	Dominant Species?	Indicator Status I-Ac I-Ac	Dominance Test worksheet:         Number of Dominant Species         That Are OBL, FACW, or FAC:         Total Number of Dominant         Species Across All Strata:
4	700	= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum         (Plot size:)           1. Sal MONDENNI				Prevalence Index worksheet:
4				FAC species x 3 =
Herb Stratum (Plot size:)	40	= Total Co	over	FACU species         x 4 =           UPL species         x 5 =
1. Slavely Sertice	_ 30	~	GBL_	Column Totals: (A) (B)
2. SOFF rush	- 70		FACE	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
4				<ul> <li>1 - Rapid Test for Hydrophytic Vegetation</li> <li>2 - Dominance Test is &gt;50%</li> <li>3 - Prevalence Index is ≤3.0<sup>1</sup></li> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> <li>5 - Wetland Non-Vascular Plants<sup>1</sup></li> <li>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</li> <li><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</li> </ul>
Woody Vine Stratum (Plot size: 101)	45	= Total Co	ver	
1. Enclish LUG			UPL	Hydrophytic Vegetation
% Bare Ground in Herb Stratum	5	_= Total Co	ver	Present? Yes No
Remarks:				

#### SOIL

Depth	Matrix		pth needed to docu Red	ox Feature				,
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-7	IOYR 311	100						
-11	104/24/2	99	104R5/6	61	C	M		
1/0+	104 (13	100	104R516	117	C	na		
101	101015	-100	TOALS 10	_ 10	<u> </u>			
				_	· · · · ·			
		_						
							· ·	
-					-			
		nintion Di	Reduced Matrix, C				21	n: PL=Pore Lining, M=Matrix.
			LRRs, unless oth			eu Sanu Gi		or Problematic Hydric Soils <sup>3</sup>
Histosol			Sandy Redox		,		2 cm Mu	
	pipedon (A2)		Stripped Matri					ent Material (TF2)
Black Hi			Loamy Mucky	. ,	<sup>1</sup> ) ( <b>excep</b>	t MLRA 1)		allow Dark Surface (TF12)
Hydroge	n Sulfide (A4)		Loamy Gleyed	d Matrix (F	2)			xplain in Remarks)
	d Below Dark Surfa	ce (A11)	Depleted Matr					
	ark Surface (A12)		Redox Dark S	•				f hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark					ydrology must be present,
	ileyed Matrix (S4) ayer (if present):		Redox Depres	sions (⊦8)		_	uniess dis	sturbed or problematic.
	-ayer (ii present):							
Type:	aboa):		_				Used at a D - 11 P	aanta Var Na I
Depth (in Remarks:	cnes):						Hydric Soil Pre	sent? Yes No V
Vetland Hy Primary India	drology Indicators cators (minimum of		ed; check all that ap	oly)				y Indicators (2 or more required)
Vetland Hyd Primary India Surface	drology Indicators ators (minimum of Water (A1)		Water-St	ained Lea		except	Water	r-Stained Leaves (B9) (MLRA 1, 2
<b>Vetland Hy</b> Primary India Surface High Wa	drology Indicators cators (minimum of Water (A1) iter Table (A2)		Water-St	ained Leav A 1, 2, 4A,		эхсерt	Water 44	r-Stained Leaves (B9) (MLRA 1, 2 A, and 4B)
Wetland Hyd Primary India Surface High Wa Saturatia	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3)		Water-St MLRA Salt Crus	ained Leav <b>A 1, 2, 4A,</b> st (B11)	and 4B)	эхсерt	Water 44 Drain	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> A, <b>and 4B)</b> age Patterns (B10)
Wetland Hy Primary India Surface High Wa Saturatio Water M	drology Indicators cators (minimum of Water (A1) iter Table (A2) on (A3) arks (B1)		Water-St MLRA Salt Crus Aquatic I	ained Leav A <b>1, 2, 4A,</b> st (B11) nvertebrate	<b>and 4B)</b> es (B13)	except	Wate 4A Drain Dry-S	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> A, <b>and 4B)</b> age Patterns (B10) season Water Table (C2)
Wetland Hyd Primary India Surface High Wa Saturatio Water M Sedimer	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2)		Water-St MLRA Salt Crus Aquatic I Hydroger	ained Leav A 1, 2, 4A, st (B11) nvertebrate n Sulfide C	<b>and 4B)</b> es (B13) )dor (C1)		Wate 44 Drain Dry-S Satur	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> A, <b>and 4B)</b> age Patterns (B10) leason Water Table (C2) ation Visible on Aerial Imagery (C
Vetland Hy Primary India Surface High Wa Saturatio Saturatio Water M Sedimer Drift Dep	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		Water-St MLRA Salt Crus Aquatic I Hydroger Oxidized	ained Lear A <b>1, 2, 4A,</b> st (B11) nvertebrate n Sulfide C Rhizospho	and 4B) es (B13) Odor (C1) eres along	Living Roc	Water Drain Dry-S Satur ots (C3) Geom	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> A, and 4B) age Patterns (B10) teason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) tt or Crust (B4)		Water-St MLRA Salt Crus Aquatic I Hydrogen Oxidized Presence	ained Leav A <b>1, 2, 4A,</b> st (B11) nvertebrate n Sulfide C Rhizospho e of Reduc	and 4B) es (B13) Odor (C1) eres along ed Iron (C	Living Roc 4)	Water     Water     A     Drain     Dry-S     Satur ots (C3) Geom     Shalle	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> A, <b>and 4B)</b> age Patterns (B10) teason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) ow Aquitard (D3)
Vetland Hyd Primary India Surface High Wa Saturatia Water M Sedimer Drift Deg Algal Ma Iron Deg	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		Water-St MLRA Salt Crus Aquatic I Hydrogen Oxidized Presence Recent In	ained Lear A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizospho e of Reduc ron Reduc	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille	Living Roc 4) ed Soils (C6	Water     44      Drain     Dry-S     Satur     ots (C3) Geom     Shalle     S) FAC-	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) ow Aquitard (D3) Neutral Test (D5)
Vetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	one require	Water-St MLRA Salt Crus Aquatic I Hydrogei Oxidized Presence Recent In Stunted of	ained Lean A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduc ron Reduct or Stressed	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (E	Living Roc 4)	Water     44      Drain     Dry-S     Satur     ots (C3) Geon     Shalle 3)	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> )
Vetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial	one require	Water-St MLRA Salt Crus Aquatic I Hydrogen Oxidized Presence Recent In Stunted of 37)Other (E:	ained Lear A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizospho e of Reduc ron Reduc	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (E	Living Roc 4) ed Soils (C6	Water     44      Drain     Dry-S     Satur     ots (C3) Geon     Shalle 3)	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) ow Aquitard (D3) Neutral Test (D5)
Vetland Hy Primary India Surface High Wa Saturation Vater M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Conca	one require	Water-St MLRA Salt Crus Aquatic I Hydrogen Oxidized Presence Recent In Stunted of 37)Other (E:	ained Lean A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduc ron Reduct or Stressed	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (E	Living Roc 4) ed Soils (C6	Water     44      Drain     Dry-S     Satur     ots (C3) Geon     Shalle 3)	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C4 norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> )
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concar vations:	one require I Imagery (E ve Surface	Water-St MLRA Salt Crus Aquatic I Hydrogen Oxidized Presence Recent In Stunted of 87)Other (E: (B8)	ained Leas A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizospho e of Reduct ron Reduct for Stressed xplain in R	and 4B) es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (D emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A	Water     44      Drain     Dry-S     Satur     ots (C3) Geon     Shalle 3)	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C4 norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> )
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Sirface Wat	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) ht Deposits (B2) bosits (B3) tt or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concar vations: er Present?	one require I Imagery (I ve Surface Yes	Water-St MLRA 	ained Lean A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct on Reduct or Stressed xplain in R	and 4B) es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (D emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A	Water     44      Drain     Dry-S     Satur     ots (C3) Geon     Shalle 3)	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C4 norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> )
Vetland Hyd Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wat Nater Table	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present?	one require I Imagery (E ve Surface Yes Yes	Water-St MLRA 	ained Lean A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct or Reduct or Stressed xplain in R nches):	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (C emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A	Water 44 Drain Dry-S Satur Shallo S) / FAC- ) Raise Frost	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C4 norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> ) -Heave Hummocks (D7)
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wate Nater Table Saturation P Includes cap	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present? resent? pillary fringe)	one require I Imagery (I ve Surface Yes Yes	Water-St MLRA 	ained Lean A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct or Reduct or Stressed xplain in R nches): nches):	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (E emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A	→ Wated 4A → Drain → Dry-S → Satur ots (C3) → Geom → Shallo S) → FAC- → Raised → Frost- and Hydrology Pr	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C4 norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) (L <b>RR A</b> )
Vetland Hyd Primary India Surface High Wa Saturatie Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wat Nater Table Saturation P	drology Indicators 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 Concar vations: er Present? Present?	one require I Imagery (E ve Surface Yes Yes	Water-St MLRA 	ained Lean A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct or Reduct or Stressed xplain in R nches):	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (C emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A	Water 44 Drain Dry-S Satur Shallo S) / FAC- ) Raise Frost	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> ) -Heave Hummocks (D7)
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Wate Nater Table Saturation P Includes cap	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present? resent? pillary fringe)	one require I Imagery (I ve Surface Yes Yes	Water-St MLRA 	ained Lean A 1, 2, 4A, st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct or Reduct or Stressed xplain in R nches): nches):	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (E emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A	→ Wated 4A → Drain → Dry-S → Satur ots (C3) → Geom → Shallo S) → FAC- → Raised → Frost- and Hydrology Pr	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> ) -Heave Hummocks (D7)
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Water Surface Water Saturation P (includes can Describe Re	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present? Present? resent? pillary fringe) corded Data (stream	one require	Water-St MLRA 	ained Lear <b>A 1, 2, 4A,</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct for Reduct for Reduct for Stressed xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A UNIT (LRR A Wetl spections),	Water     44     47     47     47     47     47     47     47     5	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) leason Water Table (C2) ation Visible on Aerial Imagery (C3 horphic Position (D2) bw Aquitard (D3) Neutral Test (D5) bd Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7) esent? Yes <u>No</u>
Wetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Water Saturation P (includes can Describe Re	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present? Present? resent? pillary fringe) corded Data (stream	one require	Water-St MLRA 	ained Lear <b>A 1, 2, 4A,</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct for Reduct for Reduct for Stressed xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A UNIT (LRR A Wetl spections),	Water     44     47     47     47     47     47     47     47     5	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) ieason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) ow Aquitard (D3) Neutral Test (D5) od Ant Mounds (D6) ( <b>LRR A</b> ) -Heave Hummocks (D7)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wate Table Saturation P (includes can Describe Re	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present? Present? resent? pillary fringe) corded Data (stream	one require	Water-St MLRA 	ained Lear <b>A 1, 2, 4A,</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct for Reduct for Reduct for Stressed xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A UNIT (LRR A Wetl spections),	Water     44     47     47     47     47     47     47     47     5	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) leason Water Table (C2) ation Visible on Aerial Imagery (C horphic Position (D2) bw Aquitard (D3) Neutral Test (D5) bd Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7) esent? Yes <u>No</u>
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Water Nater Table Saturation P Surface Re	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present? Present? resent? pillary fringe) corded Data (stream	one require	Water-St MLRA 	ained Lear <b>A 1, 2, 4A,</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct for Reduct for Reduct for Stressed xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A UNIT (LRR A Wetl spections),	Water     44     47     47     47     47     47     47     47     5	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) leason Water Table (C2) ation Visible on Aerial Imagery (C horphic Position (D2) bw Aquitard (D3) Neutral Test (D5) bd Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7) esent? Yes <u>No</u> <u>No</u>
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Water Nater Table Saturation P includes can Describe Re	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar vations: er Present? Present? Present? resent? pillary fringe) corded Data (stream	one require	Water-St MLRA 	ained Lear <b>A 1, 2, 4A,</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct for Reduct for Reduct for Stressed xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	Living Roc 4) ed Soils (C6 D1) (LRR A UNIT (LRR A Wetl spections),	Water     44     47     47     47     47     47     47     47     5	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) leason Water Table (C2) ation Visible on Aerial Imagery (C horphic Position (D2) bw Aquitard (D3) Neutral Test (D5) bd Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7) esent? Yes <u>No</u> <u>No</u>
Vetland Hyv Primary India Surface High Wa Saturation Water M Sedimer Drift Dep Algal Ma Tron Dep Surface Inundati Sparsely Field Obser Surface Water Vater Table Saturation P Includes can Describe Re	drology Indicators <u>cators (minimum of</u> Water (A1) ther Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present? present? pillary fringe) corded Data (stread	Ilmagery (E ve Surface Yes Yes Yes Tauge, m	Water-St MLRA 	ained Lear A 1, 2, 4A, st (B11) nvertebrate in Sulfide C Rhizosphi e of Reduct or Reduct or Stresser xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (C emarks) revious in	Uning Roc 4) ed Soils (Ce D1) (LRR A Wetl spections),	Water 4A Drain Dry-S Satur Satur Satur Shall FAC- Prost and Hydrology Pr if available:	r-Stained Leaves (B9) ( <b>MLRA 1, 2</b> age Patterns (B10) eason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) bow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D6) ( <b>LRR A</b> ) -Heave Hummocks (D7)
Vetland Hyv Primary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Water Vater Table Saturation P includes can Describe Re	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) ht Deposits (B2) posits (B3) th or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present? Present? resent? positary fringe) corded Data (stread	I Imagery (F ve Surface Yes Yes n gauge, m	Water-St MLRA 	ained Lear <b>A 1, 2, 4A,</b> st (B11) nvertebrate in Sulfide C Rhizosphi e of Reduct for Reduct for Reduct for Reduct for Stressed xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (E emarks) revious in	Vetions),	Water     44     4     Drain     Dry-S     Satur     Satur     Shalk     S)    FAC-     Raise     Frost  and Hydrology Pr if available:	r-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) age Patterns (B10) leason Water Table (C2) ation Visible on Aerial Imagery (Ca horphic Position (D2) bw Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) esent? Yes No present a present a No No No No No No No No No No
Vetland Hyd rimary India Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Deg Surface Inundati Sparsely Field Obser Surface Water Vater Table Saturation P Includes can Describe Re Remarks: Control of the second Se	drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present? present? pillary fringe) corded Data (stream vations of Engineers	I Imagery (E ve Surface Yes Yes n gauge, m	Water-St MLRA 	ained Lear <b>A 1, 2, 4A,</b> st (B11) nvertebrate in Sulfide C Rhizosphe e of Reduct for Reduct for Reduct for Stressed xplain in R nches): nches): I photos, p	and 4B) es (B13) odor (C1) eres along ed Iron (C tion in Tille d Plants (E emarks) revious in	Vetl	Water     44     4     4     4     4     4     4     4     4     4     4     5     Drain     Dry-S     Satur     Satur     Shalk     5)	r-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) age Patterns (B10) leason Water Table (C2) ation Visible on Aerial Imagery (C norphic Position (D2) bw Aquitard (D3) Neutral Test (D5) od Ant Mounds (D6) (LRR A) Heave Hummocks (D7) esent? Yes <u>No</u> <u>present</u> a hydrolg to Weater Staine

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

Project/Site: 2000 24 Ave NW	Ci	ty/CountyDlymy	and Thurston Sampling Date: 5/30/23
Applicant/Owner: RJ Development		1	State: WA Sampling Point: TP - 7
VAMA IVC	Se		nge: TIEN K2W SS7
Landform (hillslope, terrace, etc.) Mulslane			
Subregion (LRR):			Long: [22, 9]731 W Datum: WGS FY
	Lat: 97+	COTO M	Long: 102, 17FOL W Datum: 00319
Soil Map Unit Name: Alderwood gravell			
Are climatic / hydrologic conditions on the site typical for the			
Are Vegetation, Soil, or Hydrology			'Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology			eded, explain any answers in Remarks.)
Hydrophytic Vegetation Present? Yes			ocations, transects, important features, etc.
Hydric Soil Present? Yes		Is the Sampled	
Wetland Hydrology Present? Yes		within a Wetlar	nd? Yes No
Remarks: TP locuped 5.06 Wetland		o. ob dite	lu
VEGETATION – Use scientific names of pla			
Tree Stratum (Plot size: _30')		Dominant Indicator Species? Status	Dominance Test worksheet:
1. Big liaf maple	15	/ FACH	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2,			Total Number of Dominant 2
3,			Species Across All Strata:
4			Percent of Dominant Species / /
Sapling/Shrub Stratum (Plot size: / 0/)	18 =	Total Cover	That Are OBL, FACW, or FAC: (A/B)
1. willow	20	TA	Prevalence Index worksheet:
2. Indian Dlom	- 50 -	DACIA	Total % Cover of: Multiply by:
3. H. Black berry	75-	FAR	OBL species x 1 =
4.			FACW species x 2 =
5			FAC species x 3 =
1.7	100 =	Total Cover	FACU species x 4 =
Herb Stratum (Plot size: )			UPL species x 5 =
1			Column Totals: (A) (B)
2			Prevalence Index = B/A =
3			Hydrophytic Vegetation Indicators:
45			1 - Rapid Test for Hydrophytic Vegetation
5			2 - Dominance Test is >50%
7			3 - Prevalence Index is ≤3.0 <sup>1</sup>
8			4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9			5 - 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
Woody Vine Stratum (Plot size: 10/)	<del></del> =	Total Cover	be present, unless disturbed or problematic.
1			Hydrophytic
2			Vegetation Present? Yes No
% Bare Ground in Herb Stratum	0	Total Cover	
Remarks:			

#### SOIL

Sampling Point: 77-7

Profile Desc	ription: (Describe	to the dep	oth needed to docun	nent the i	ndicator	or confirm	n the absence of indicators.)
Depth	Matrix			K Features		1	Tautura
(inches)	Color (moist)	%	Color (moist)		<u>Type</u>	Loc <sup>2</sup>	<u>Texture</u> <u>Remarks</u>
0-4	104R31	100	Damark				silt loom
19-11	10/R3/1	99	7. SYR414	1%	<u> </u>	$\underline{M}$	silt loam
11-16	104R 3/3	80	104R 4/6	20	C	M	100 m w gravel
						(	
-				_	-		
					-		
÷			-				· · · · · · · · · · · · · · · · · · ·
1= 0.0						- Cand Co	rains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
			Reduced Matrix, CS			ed Sand Gi	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox (S		<i></i> ,		2 cm Muck (A10)
	pipedon (A2)		Stripped Matrix	-			Red Parent Material (TF2)
	istic (A3)		Loamy Mucky N		1) (excep	t MLRA 1)	
	en Sulfide (A4)		Loamy Gleyed I	Matrix (F2	)		Other (Explain in Remarks)
Deplete	d Below Dark Surfac	ce (A11)	Depleted Matrix				
	ark Surface (A12)		Redox Dark Su				<sup>3</sup> Indicators of hydrophytic vegetation and
	Aucky Mineral (S1)		Depleted Dark S		7)		wetland hydrology must be present, unless disturbed or problematic.
	Gleyed Matrix (S4)		Redox Depress	ions (F8)			unless disturbed or problematic.
	Layer (if present):						
Type: Depth (in	chos);		_				Hydric Soil Present? Yes No
Remarks:	cries).		_		_		
Remarks.							
HYDROLC	GY						
Wetland Hy	drology Indicators	:					
Primary Indi	cators (minimum of	one require	ed; check all that appl	(Y)			Secondary Indicators (2 or more required)
Surface	Water (A1)		Water-Sta	ined Leav	es (B9) (	except	Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)		MLRA	1, 2, 4A, a	and 4B)		4A, and 4B)
Saturati			Salt Crust	(B11)			Drainage Patterns (B10)
Water N	/larks (B1)		Aquatic In	vertebrate	es (B13)		Dry-Season Water Table (C2)
Sedime	nt Deposits (B2)		Hydrogen	Sulfide O	dor (C1)		Saturation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Oxidized F	Rhizosphe	res along	Living Roo	ots (C3) Geomorphic Position (D2)
Algal M	at or Crust (B4)		Presence	of Reduce	ed Iron (C	4)	Shallow Aquitard (D3)
Iron De	posits (B5)		Recent Iro	n Reducti	ion in Tille	ed Soils (C	6) FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted or	Stressed	Plants (I	01) ( <b>LRR A</b>	A) Raised Ant Mounds (D6) (LRR A)
Inundat	ion Visible on Aerial	Imagery (E	B7) Other (Exp	olain in Re	emarks)		Frost-Heave Hummocks (D7)
Sparse	y Vegetated Concav	ve Surface	(B8)			-	
Field Obser							
Surface Wa			No <u> </u> Depth (in				
Water Table	Present?	Yes	No <u> </u>	ches):		- 1	
Saturation F		Yes	No Depth (in	ches):		Wet	land Hydrology Present? Yes No
(includes ca	pillary fringe)		nonitoring well, aerial	nhotos n	evious in	spections)	if available:
Describe Re	ecordeu Data (strear	n yauye, n	ionitoring weil, aeriai	priotos, pi	evious II	spections).	
Demerker		_			_		
Remarks:							
-				-			

WETLAND DETERMIN	IATION DATA FORM -	Western Mour	ntains, Valleys, and Coast Region
Project/Site: 2000 24th Ave 1	い <u> び</u> City/0	County: Oymp	1 <u>a/Thurson</u> Sampling Date: <u>1/19/23</u>
Applicant/Owner: RJ Develupm	ent	J ,	State: WA Sampling Point: <u>TP-8</u>
	Secti	ion, Township, Ran	ge: TISN RZW SST
Landform (hillslope, terrace, etc.):	Loca	al relief (concave, c	onvex, none)
Subregion (LRR):	Lat: 47,06	0846°N	Long: 122. 92 73° Datum: W3 584
Soil Map Unit Name: Aldering Gh			
Are climatic / hydrologic conditions on the site			
Are Vegetation, Soil, or Hydro			Normal Circumstances" present? Yes 1
Are Vegetation, Soil, or Hydro			eded, explain any answers in Remarks.)
		· ·	
SUMMARY OF FINDINGS – Attach	n site map showing sar	npling point lo	ocations, transects, important features, etc.
······································	es No	Is the Sampled	A
	es No	within a Wetlan	
Wetland Hydrology Present? Ye Remarks:	es No		
Remarks.			
wetlandedge topo + "	Sala break		
VEGETATION – Use scientific nam			
2 21		minant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: $30'$ )		ecies? <u>Status</u>	Number of Dominant Species
1. red alder 2. W. upd Apdar	95_		That Are OBL, FACW, or FAC: (A)
3			Total Number of Dominant
4			•
		otal Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 10			Prevalence Index worksheet:
1. D. Spirea	<u> </u>	Z FACIN	Total % Cover of:Multiply by:
2. HBlackbern	<u> </u>	<u> </u>	OBL species x 1 =
3			FACW species x 2 =
- <del>4</del>	······································		FAC species x 3 =
	<u></u>	otal Cover	FACU species x 4 =
Herb Stratum (Plot size:)	Area		UPL species x 5 =
1. lady form		- MC	Column Totals: (A) (B)
2. <u>Slovich sed ge</u>	<u> </u>	2 VOC	Prevalence Index = B/A =
1			Hydrophytic Vegetation Indicators:
4 5			1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%
6			$2^{\circ}$ Dominance results > 50 % $3^{\circ}$ Prevalence Index is $\leq 3.0^{1}$
7			4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8			data in Remarks or on a separate sheet)
9			5 - Wetland Non-Vascular Plants <sup>1</sup>
10			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	2		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 10	) <u></u> = To	otal Cover	
1	·		Hydrophytic
2			Vegetation
V Bara Cround in Linet Chart Str.	<u></u> = TO	otal Cover	Present? Yes No
% Bare Ground in Herb Stratum	<del></del>		l

Sampling Point: TP-8

Depth	8.4 × 4.4						m the absend	
(inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	Type <sup>1</sup>	Loc <sup>2</sup>	- Texture	Remarks
0-5	104B 32	100					1	
~ •		- 100-	Imp str.				lan	· · · · · · · · · · · · · · · · · · ·
5~16	104R413	<u>- 1)</u>	OIRS 6	<u> </u>	<u> </u>	M	sitio	am
						<u></u>		·····
			-		. <u></u>			
						45.		······································
	Concentration, D=De					d Sand C		ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applie	cable to all	LRRs, unless othe	rwise not	ed.)		Indica	tors for Problematic Hydric Soils <sup>3</sup> :
Histoso			Sandy Redox (					cm Muck (A10)
	pipedon (A2)		Stripped Matrix	• •				ed Parent Material (TF2)
	listic (A3)		Loamy Mucky	•		t MLRA 1	·	ery Shallow Dark Surface (TF12)
	en Sulfide (A4) ed Below Dark Surfac	oo (A11)	Loamy Gleyed Depleted Matri		2)		01	ther (Explain in Remarks)
'	ark Surface (A12)	ce (ATT)	Redox Dark Su	· ·			<sup>3</sup> Indica	tors of hydrophytic vegetation and
	Mucky Mineral (S1)		Depleted Dark	• •				land hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress	•	.,			ess disturbed or problematic.
	Layer (if present):		- <u></u> ,	, <u> </u>				
Туре:								
Depth (in	nches):						Hydric Sc	oil Present? Yes Mo
IYDROLC	DGY							
-	drology Indicators							
-			d; check all that app	iγ)			<u>Sec</u>	ondary Indicators (2 or more required)
Primary Indi	rdrology Indicators icators (minimum of Water (A1)		↓_/Water-Sta	ined Leav		xcept		
Primary Indi Surface High Wi	rdrology Indicators icators (minimum of Water (A1) iater Table (A2)		↓Water-Sta MLRA	ined Leav 1, 2, 4A,		xcept	_	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Primary Indi Surface High Wi Saturati	rdrology Indicators icators (minimum of Water (A1) ater Table (A2) ion (A3)		₩ater-Sta MLRA Sait Crust	ined Leav <b>1, 2, 4A</b> , (B11)	and 4B)	xcept	_	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10)
Primary Indi Surface High Wi Saturati Water M	rdrology Indicators icators (minimum of e water (A1) ater Table (A2) ion (A3) Marks (B1)		Water-Sta MLRA Salt Crust Aquatic In	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate	and 4B) es (B13)	xcept	_	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10) Dry-Season Water Table (C2)
Primary Indi Surface High Wa Saturati Water M Sedime	ydrology Indicators icators (minimum of a water (A1) iater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O	and <b>4B)</b> es (B13) dor (C1)	·		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 Indi Surface High Wa Saturati Water N Sedime Drift De	ydrology Indicators icators (minimum of a water (A1) iater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate Sulfide O Rhizosphe	and 4B) es (B13) dor (C1) eres along	Living Ro		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 Indi Surface High Wa Saturati Water N Sedime Drift De Algal Ma	ydrology Indicators icators (minimum of e water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) fat or Crust (B4)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduce	and 4B) es (B13) dor (C1) eres along ed Iron (C4	Living Ro		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 Indi Surface High W: Saturati Water M Sedime Drift De Algal M: Iron De	vdrology Indicators icators (minimum of e water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) fat or Crust (B4) posits (B5)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent In	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled	Living Ro I) d Soils (C		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 Indi Surface High Wi Saturati Water M Sedime Drift De Algal M Iron Dej Surface	ydrology Indicators icators (minimum of e water (A1) ater Table (A2) ion (A3) Marks (B1) mt Deposits (B2) oposits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6)	one require	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o	ined Leav <b>1, 2, 4A</b> , (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct r Stressed	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilleo Plants (D	Living Ro I) d Soils (C		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> )
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Primary Indi Surface High Wi Saturati Water M Sedime Drift De Algal M Iron De Inundati Surface Inundati Field Obser Surface Wat Surface Water Table Saturation P	Advance of the second s	Imagery (B re Surface ( Yes Yes	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o 7)Other (Ex B8)	ined Leav <b>1, 2, 4A,</b> (B11) vertebrate Sulfide O Rhizosphe of Reduce on Reduct r Stressed plain in Re ches): ches):	and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tilleo Plants (D emarks)	Living Ro I) d Soils (C 1) (LRR /		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> )
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#### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 2000 24th Ave NW	(	City/County	DIA Thurston Sampling Date: 7/19/23
Applicant/Owner: RS Development		, ,,	State: WA Sampling Point: P-9
Investigator(s):		Section Township Ra	
Landform (hillslope, terrace, etc.):			
Subragion (LBP):	1 at: 47	. 06847 °N	Long:/22.92.735 W Datum: W6584
		1	
Soil Map Unit Name: Alor wood Smithell	. &	46,	
Are climatic / hydrologic conditions on the site typical fo			and the second s
Are Vegetation, Soil, or Hydrology			
Are Vegetation, Soil, or Hydrology	naturally pro	blematic? (If ne	eded, explain any answers in Remarks.)
		sampling point l	ocations, transects, important features, etc.
	No	is the Complet	A
Hydric Soil Present? Yes	No V	Is the Sampled within a Wetlar	· · ·
Wetland Hydrology Present? Yes	No		
Remarks:			
VEGETATION – Use scientific names of p	lants		
	Absolute	Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u> )		Species? Status	Number of Dominant Species 3
1. ved alder		V PAC	That Are OBL, FACW, or FAC: (A)
2. W. red ledar	30	FAC	Total Number of Dominant
3			Species Across All Strata: (B)
4			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)	40	_ = Total Cover	That Are OBL, FACW, or FAC: (A/B)
1. Sec. (a)	75	/ FACH	Prevalence Index worksheet:
2. Salvandor v n A	<u> </u>	FA	Total % Cover of: Multiply by:
3. A. Blackberry		FAC	OBL species x 1 =
4.			FACW species x 2 =
5			FAC species x 3 =
	85	_ = Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)	1		UPL species x 5 = (A)
1. lady fern	<u> </u>	V FR	Column Totals: (A) (B)
2. Sloveh sed se		OBC CACIL	Prevalence Index = B/A =
3. <u>Sword fein</u>			Hydrophytic Vegetation Indicators:
4 5			<ul> <li>1 - Rapid Test for Hydrophytic Vegetation</li> <li>2 - Dominance Test is &gt;50%</li> </ul>
6			2 - Dominance Test is >50% 3 - Prevalence Index is $\leq 3.0^1$
7			4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8			data in Remarks or on a separate sheet)
9			5 - 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
1.57	23	_= Total Cover	be present, unless disturbed or problematic.
<u>Woody Vine Stratum</u> (Plot size: $/O'$ )			
1		·	Hydrophytic
2			Vegetation Present? Yes No No
% Bare Ground in Herb Stratum		_= Total Cover	
Remarks:			

#### SOIL

Sampling Point:

		•	ument the	nuicator		n the abso	ence of indicators.)
Depth	Matrix		dox Feature				
	(moist) <u>%</u>		%	Type <sup>1</sup>	_Loc <sup>2</sup>	<u> </u>	
0-11 104R	<u> 3/2 /00</u>	)				loan	<u>n</u>
11-14 104R	4/2 100	· · · · · · · · · · · · · · · · · · ·				Sitt	laim
14-16+ 104F	24/2 95	101R5/6		C	m	SH	lam
					<u> </u>	<u><u> </u></u>	
·							
					<u> </u>		
· ·					<u></u>		
<sup>1</sup> Type: C=Concentratio	n, D=Depletion,	RM=Reduced Matrix,	CS=Covere	d or Coate	d Sand Gr	rains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators							icators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)		Sandy Redox	(S5)				2 cm Muck (A10)
Histic Epipedon (A:	2)	Stripped Mati	rix (S6)			_	Red Parent Materiai (TF2)
Black Histic (A3)		Loamy Muck			MLRA 1)		Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (	,	Loamy Gleye		)			Other (Explain in Remarks)
Depleted Below Da     Thick Dark Surface		) Depleted Mat Redox Dark \$				31	licators of hydronhytic vocateties
Sandy Mucky Mine	• •	Redox Darks	• •	7)			licators of hydrophytic vegetation and wetland hydrology must be present,
Sandy Mucky Mile		Redox Depre		')			unless disturbed or problematic.
Restrictive Layer (if p							
Туре:	-						
Depth (inches):						Hydric	Soil Present? Yes No
Remarks:							× ,
dodated a	alar ( ID	VRULA DI	more	= +	vo la	1- 10	to meet indicator
alpuerto o		11-1104	r CERCAR	)	al al	ea p	TO make indicator
HYDROLOGY							
HYDROLOGY Wetland Hydrology In	dicators:						
Wetland Hydrology in		uired: check all that ap	עומי				Secondary Indicators (2 or more required)
Wetland Hydrology In Primary Indicators (min	imum of one req			es (B9) ( <b>e</b>	xcept	<u>S</u>	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MI BA 1 2
Wetland Hydrology In Primary Indicators (min Surface Water (A1)	imum of one reg )	Water-S	tained Leav		xcept	<u>S</u>	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrology In <u>Primary Indicators (min</u> Surface Water (A1) High Water Table (	imum of one reg )	Water-S MLR	tained Leav A 1, 2, 4A, a		xcept	<u>S</u>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology In <u>Primary Indicators (min</u> Surface Water (A1) High Water Table ( Saturation (A3)	imum of one reg )	Water-S MLR Salt Cru	tained Leav A 1, 2, 4A, a	ind 4B)	xcept	<u>5</u> 	<ul> <li>Water-Stained Leaves (B9) (MLRA 1, 2,</li> <li>4A, and 4B)</li> <li>Drainage Patterns (B10)</li> </ul>
Wetland Hydrology In <u>Primary Indicators (min</u> Surface Water (A1) High Water Table (	imum of one reg ) A2)	Water-S MLR Salt Cru Aquatic	tained Leav <b>A 1, 2, 4A,</b> a st (B11)	ind 4B) s (B13)	xcept	<u>_</u>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology In Primary Indicators (min Surface Water (A1) High Water Table ( Saturation (A3) Water Marks (B1)	imum of one reg ) A2)	Water-S MLR Salt Cru Aquatic Hydroge	itained Leav A 1, 2, 4A, a st (B11) Invertebrate en Sulfide Od	and 4B) 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)
Wetland Hydrology In Primary Indicators (min Surface Water (A1) High Water Table ( Saturation (A3) Water Marks (B1) Sediment Deposits	imum of one reg ) A2) (B2)	Water-S MLR Salt Cru Aquatic Hydroge Oxidized	itained Leav A 1, 2, 4A, a st (B11) Invertebrate en Sulfide Od	nd 4B) s (B13) lor (C1) res along	Living Roc		<ul> <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> </ul>
Wetland Hydrology In Primary Indicators (min Surface Water (A1) High Water Table ( Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	imum of one reg ) A2) (B2)	Water-S     MLR     Salt Cru     Aquatic     Hydroge     Oxidized     Presend	tained Leav A 1, 2, 4A, a st (B11) Invertebrate en Sulfide Oo d Rhizosphe	s (B13) for (C1) res along d Iron (C4	Living Roc		<ul> <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>
Wetland Hydrology In Primary Indicators (min Surface Water (A1) High Water Table ( Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust	imum of one reg ) A2) (B2) (B4)	Water-S     MLR     Salt Cru     Aquatic     Hydroge     Oxidized     Presenc     Recent	tained Leav A 1, 2, 4A, a st (B11) Invertebrate en Sulfide Od d Rhizosphe e of Reduce	s (B13) dor (C1) res along d Iron (C4 on in Tille	Living Roc ) d Soils (C6	- - - - - - - - - - - - - - - - - - 	<ul> <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>
Wetland Hydrology In Primary Indicators (min Surface Water (A1) High Water Table ( Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Cracks Inundation Visible of	imum of one reg ) A2) (B2) (B4) s (B6) on Aerial Imager	<pre>Water-S MLR MLR Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted y (B7) Other (E</pre>	tained Leav A 1, 2, 4A, a st (B11) Invertebrate an Sulfide Oo d Rhizosphe e of Reduce Iron Reducti or Stressed	nd 4B) s (B13) for (C1) res along d Iron (C4 on in Tille Plants (D	Living Roc ) d Soils (C6	- - - - - - - - - - - - - - - - - - 	<ul> <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>
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WETL	AND	DETE	RMINA	TION	DATA	FORM	– Western	Mountains,	Valleys,	and Coast Re	gion
------	-----	------	-------	------	------	------	-----------	------------	----------	--------------	------

Project/Site: 2000 24 Ave NW	City/County: Olympia Thurston sampling Date: 7/19/23
Applicant/Owner: RT Development	State: WA Sampling Point: TP-10
Investigator(s): KAM	Section, Township, Range: TIEN R210557
Landform (hillslope, terrace, etc.): hul Slope	Local relief (concave, convex, none): <u>NONL</u> Slope (%): <u>2 %</u>
Subregion (LRR): Lat: 47	7.008457°N Long: 122.92746°W Datum: WGS 84
Soil Map Unit Name: Alderwood Gravelly Sund 1	1
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? 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 pr	oblematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important 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 <u>No</u>
Remarks:	

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

2 21	Absolute	Dominant Indicator	Dominance Test worksheet	:
Tree Stratum (Plot size: 30/)		Species? Status	Number of Dominant Species	7
1red alder	30	MAC	That Are OBL, FACW, or FAC	): (A)
2			Tatal Number of Deminent	0
3			Total Number of Dominant Species Across All Strata:	С (B)
4		••••••••••••••••••••••••••••••••••••••	opeoles Across Air otrata.	(0)
	30		Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 10')		= Total Cover	That Are OBL, FACW, or FAC	C: (A/B)
1. red alcur	ID	FA	Prevalence Index workshee	t:
2 beaked hazlenut	70	FAU	Total % Cover of:	Multiply by:
		FAr.	OBL species	x 1 =
3. Calmonberry	10	······································	FACW species	x 2 =
4. Solal	10	FACU	FAC species	
5. D. Soma	10	FAC		
	110	= Total Cover	FACU species	
Herb Stratum, (Plot size:)			UPL species	
1. lady fern	10	FAC	Column Totals:	(A) (B)
2. dear Fern	60	K FAC	Prevalence Index = B/A	
3. Sword Fern	Z.	FACI	Hydrophytic Vegetation Ind	
4			1 - Rapid Test for Hydrog	
5				
			2 - Dominance Test is >5	
6			3 - Prevalence Index is ≤	
7			4 - Morphological Adapta data in Remarks or or	tions <sup>1</sup> (Provide supporting
8			5 - Wetland Non-Vascula	
9			Problematic Hydrophytic	
10				- , ,
11			<sup>1</sup> Indicators of hydric soil and v be present, unless disturbed	
$\mathcal{D}'$	75	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: $1D'$ )				
1	• ••••••	<u> </u>	Hydrophytic	/
2			Vegetation Present? Yes	No
% Bare Ground in Herb Stratum	-0-	= Total Cover	Present? Yes V	NO
Remarks:			<b>1</b>	

US Army Corps of Engineers

#### SOIL

### Sampling Point: <u>TP-10</u>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)			
Depth Matrix	Redox Features		
	moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture Remarks	
0-11 104R312 100		SHOOM	
11-15+ 104R 412 100		Silt loam	
		3.11000	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced I	Matrix, CS=Covered or Coated Sand Gra	ins. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators: (Applicable to all LRRs, unl		Indicators for Problematic Hydric Soils <sup>3</sup> :	
	y Redox (S5)	2 cm Muck (A10)	
	ed Matrix (S6)	Red Parent Material (TF2)	
	y Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)	
Hydrogen Sulfide (A4) Loamy	y Gleyed Matrix (F2)	Other (Explain in Remarks)	
Depleted Below Dark Surface (A11) Deple	ted Matrix (F3)	_	
	x Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and	
	ted Dark Surface (F7)	wetland hydrology must be present,	
	x Depressions (F8)	unless disturbed or problematic.	
Restrictive Layer (if present):			
Туре:			
Depth (inches):		Hydric Soil Present? Yes No	
Remarks:			
		1	
HYDROLOGY			
Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all	that apply)	Secondary Indicators (2 or more required)	
Surface Water (A1) V	Nater-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,	
High Water Table (A2)	MLRA 1, 2, 4A, and 4B)	4A, and 4B)	
Saturation (A3) S	Salt Crust (B11)	Drainage Patterns (B10)	
Water Marks (B1) A	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)	
Sediment Deposits (B2) H	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3) C	Dxidized Rhizospheres along Living Roots	s (C3) Geomorphic Position (D2)	
Algal Mat or Crust (B4) F	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)	
Iron Deposits (B5) F	Recent Iron Reduction in Tilled Soils (C6)	FAC-Neutral Test (D5)	
Surface Soil Cracks (B6) S	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:			
Surface Water Present? Yes No	Depth (inches):		
	Depth (inches):	/	
		nd Hydrology Present? Yes No	
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			
	n		
No indicators observed			
		· · · · · · · · · · · · · · · · · · ·	

# Appendix D Wetland Rating Forms

### **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):	Wetland A		Date of site visit:	10/25/2022
Rated by K. McArthur and N	I. Dietsch	Trained by Ecology? I Yes No	Date of training	Mar-21
HGM Class used for rating	Depressional & Flats	Wetland has multip	le HGM classes? 🗌	Yes 🕢 No
NOTE: Form is not complete with out the figures requested (figures can be combined). Source of base aerial photo/map				
<b>OVERALL WETLAND CATEGORY</b> (based on functions I or special characteristics )				
1. Category of wetland based on FUNCTIONS				
	Category I - Total sc	ore = 23 - 27	Score for each	
Category II - Total score = 20 - 22 function based		function based		

	_ <b>Calegory II -</b> 10(al Score - 20 - 22
Х	Category III - Total score = 16 - 19
	Category IV - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List app	ropriate rating	g (H, M, L)	
Site Potential	Н	М	М	
Landscape Potential	М	М	L	
Value	Н	L	L	Total
Score Based on Ratings	8	5	4	17

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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

## 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	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	N/A
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	4
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	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

#### 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	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)	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	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)	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 dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to another figure )		
Boundary of area within 150 ft of the wetland (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 Wetland in Western Washington		
If hydrologic criteria listed in each quest	d must apply to the entire unit being rated. tion do not apply to the entire unit being rated, you probably have a unit , identify which hydrologic criteria in questions 1 - 7 apply, and go to	
1. Are the water levels in the entire unit	t usually controlled by tides except during floods?	
✓ NO - go to 2	☐ <b>YES -</b> the wetland class is <b>Tidal Fringe -</b> go to 1.1	
1.1 Is the salinity of the water dur	ing periods of annual low flow below 0.5 ppt (parts per thousand)?	
-	ed as a Freshwater Tidal Fringe use the forms for <b>Riverine</b> wetlands. It is an <b>Estuarine</b> wetland and is not scored. This method <b>cannot</b> be	
2. The entire wetland unit is flat and pre Groundwater and surface water runoff a	cipitation is the only source (>90%) of water to it. are NOT sources of water to the unit.	
☑ NO - go to 3 If your wetland can be classifi	☐ <b>YES -</b> The wetland class is <b>Flats</b> ed as a Flats wetland, use the form for <b>Depressional</b> wetlands.	
plants on the surface at any ti	of the following criteria? land is on the shores of a body of permanent open water (without any me of the year) at least 20 ac (8 ha) in size; er area is deeper than 6.6 ft (2 m).	
☑ NO - go to 4	☐ <b>YES</b> - The wetland class is <b>Lake Fringe</b> (Lacustrine Fringe)	
	ope can be very gradual ), vetland in one direction (unidirectional) and usually comes from seeps. It vtflow, or in a swale without distinct banks.	
☑ NO - go to 5	☐ YES - The wetland class is Slope	
	these type of wetlands except occasionally in very small and shallow ressions are usually <3 ft diameter and less than 1 ft deep).	
5. Does the entire wetland unit <b>meet all</b> ☐ The unit is in a valley, or stread from that stream or river, ☐ The overbank flooding occurs	am channel, where it gets inundated by overbank flooding	
☑ 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.

3

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.* 

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.

NOTES and FIELD OBSERVATIONS:

Water Quality Functions - Indicators that the site functions to in	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).	points = 3		
Wetland has an intermittently flowing stream or ditch, OR highly			
constricted permanently flowing outlet.	points = 2	3	
☐ Wetland has an unconstricted, or slightly constricted, surface outlet			
that is permanently flowing	points = 1		
Wetland is a flat depression (QUESTION 7 on key), whose outlet is			
a permanently flowing ditch.	points = 1		
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic		0	
(use NRCS definitions).	Yes = 4 No = 0		
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-sh	nrub, and/or		
Forested Cowardin classes):			
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	5	
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area	points = 1		
Wetland has persistent, ungrazed plants $< \frac{1}{10}$ 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 = $4$	4	
Area seasonally ponded is $> \frac{1}{4}$ total area of wetland	points = 2		
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = $0$		
· ·	in the boxes above	12	

Rating of Site Potential If score is:  $\boxed{2}$  12 - 16 = H  $\boxed{6}$  - 11 = M  $\boxed{0}$  - 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 u	uses that		1
generate pollutants?	Yes = 1	No = 0	I
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 we	land that are		
not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2	Add the points in the boxe	s above	1

Rating of Landscape Potential If score is: 3 or 4 = H I I 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,			0
lake, or marine water that is on the 303(d) list?	Yes = 1	No = 0	Ũ
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the	e 303(d) lis	st?	1
	Yes = 1	No = 0	I
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			2
which the unit is found)?	Yes = 2	No = 0	
Total for D 3 Add the points i	n the boxe	s above	3
Rating of Value If score is: $\boxed{2} \cdot 4 = H$ $\boxed{1} = M$ $\boxed{0} = L$			the first page

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream deg	radation
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 outlet points = 2	4
Wetland is a flat depression (QUESTION 7 on key), whose outlet is	
a permanently flowing ditch points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet	
that is permanently flowing points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of	
the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the	
deepest part.	
Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5	
☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3	
☐ The wetland is a "headwater" wetland points = 3	
Wetland is flat but has small depressions on the surface that trap water points = 1	
Marks of ponding less than 0.5 ft (6 in) points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of	
upstream basin contributing surface water to the wetland to the area of the wetland unit itself.	
$\Box$ 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	5
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	
	1
<b>Rating of Site Potential</b> If score is: $\Box 12 - 16 = H$ $\Box 6 - 11 = M$ $\Box 0 - 5 = L$ Record the rating of	
<b>Rating of Site Potential</b> If score is: $\Box 12 - 16 = H$ $\bigtriangledown 6 - 11 = M$ $\Box 0 - 5 = L$ Record the rating of D 5.0. Does the landscape have the potential to support hydrologic function of the site?	
D 5.0. Does the landscape have the potential to support hydrologic function of the site? D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	the first page
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D 5.0. Does the landscape have the potential to support hydrologic function of the site?         D 5.1. Does the wetland unit receive stormwater discharges?       Yes = 1       No = 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         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       1 or 2 = M       0 = L       Record the rating or         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	the first page 0 1 0 1 0 1 0 1 0 1 0 1 0 0 0 0 0 0 0
D 5.0. Does the landscape have the potential to support hydrologic function of the site?         D 5.1. Does the wetland unit receive stormwater discharges?       Yes = 1       No = 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         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       I or 2 = M       0 = L       Record the rating of 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	the first page 0 1 0 1 0 1 0 1 0 1 0 1 0 0 0 0 0 0 0
D 5.0. Does the landscape have the potential to support hydrologic function of the site?         D 5.1. Does the wetland unit receive stormwater discharges?       Yes = 1       No = 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         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       I or 2 = M       0 = L       Record the rating or         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.       points = 2         □ A 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	the first page 0 1 0 1 0 1 0 1 0 1 0 1 0 0 0 0 0
D 5.0. Does the landscape have the potential to support hydrologic function of the site?         D 5.1. Does the wetland unit receive stormwater discharges?       Yes = 1       No = 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         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       I or 2 = M       0 = L       Record the rating or         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 h	the first page 0 1 0 1 0 1 0 1 0 1 0 1 0 0 0 0 0
D 5.0. Does the landscape have the potential to support hydrologic function of the site?         D 5.1. Does the wetland unit receive stormwater discharges?       Yes = 1       No = 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         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       I or 2 = M       0 = L       Record the rating or         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.       points = 1         ■       Flooding from groundwater is an issue in the sub-basin.       points = 1         ■       Flooding problems are in a sub-basin farther down-gradient.       points = 1         ■       Flooding from groundwater is an issue in the sub-bas	the first page 0 1 0 1 0 1 0 1 0 1 0 1 0 0 0 0 0
D 5.0. Does the landscape have the potential to support hydrologic function of the site?         D 5.1. Does the wetland unit receive stormwater discharges?       Yes = 1       No = 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         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       1 or 2 = M       0 = L       Record the rating or         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         •       Surface floodi	the first page 0 1 0 1 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0
D 5.0. Does the landscape have the potential to support hydrologic function of the site?         D 5.1. Does the wetland unit receive stormwater discharges?       Yes = 1       No = 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         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       I or 2 = M       0 = L       Record the rating or         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.       points = 1         ■       Flooding from groundwater is an issue in the sub-basin.       points = 1         ■       Flooding problems are in a sub-basin farther down-gradient.       points = 1         ■       Flooding from groundwater is an issue in the sub-bas	the first page 0 1 0 1 0 1 0 1 0 1 0 0 0 0 0 0 0 0 0

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.	
<ul> <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>Istructures: points = 0</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, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon</li> </ul>	1
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</i> <i>hydroperiods</i> ).	
<ul> <li>Permanently flooded or inundated</li> <li>Seasonally flooded or inundated</li> <li>Seasonally flooded or inundated</li> <li>Occasionally flooded or inundated</li> <li>Saturated only</li> <li>Permanently flowing stream or river in, or adjacent to, the wetland</li> <li>Seasonally flowing stream in, or adjacent to, the wetland</li> <li>Lake Fringe wetland</li> <li>4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 types present: points = 0</li> <li>Permanently flowing stream or river in, or adjacent to, the wetland</li> <li>Seasonally flowing stream in, or adjacent to, the wetland</li> </ul>	1
Image wettand       2 points         Image wettand       2 points <td< td=""><td></td></td<>	
have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle	2
If you counted: > 19 species points = 2 5 - 19 species points = 1 < 5 species points = 0	
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and open</i> <i>water, the rating is always high.</i>	
	1
None = 0 pointsLow = 1 pointModerate = 2 points	
All three diagrams in this row are HIGH = 3 points	

<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> <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>	3
Total for H 1 Add the points in the boxes above	8

Rating of Site Potential If Score is: 15 - 18 = H 7 - 14 = M 0 - 6 = L Record the rating on the first page

U.2.0. Deep the landscene have the notential to support the hel	vitet function of the site?	
H 2.0. Does the landscape have the potential to support the hat		
H 2.1 Accessible habitat (include only habitat that directly abuts	wetland unit).	
Calculate:		
1 % undisturbed habitat + (1 % moderate &	low intensity land uses / 2 ) = 1.5%	
lf total accordible, babitat is.		0
If total accessible habitat is:		0
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	
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:		
21 % undisturbed habitat + (11 % moderate &	low intensity land uses / 2 ) = 26.5%	
		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	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 1km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	0

Rating of Landscape Potential If Score is: 4 - 6 = H 1 - 3 = M 2 < 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 policie	s? Choose	
only the highest score that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
It has 3 or more priority habitats within 100 m (see next page)		
It provides habitat for Threatened or Endangered species (any plant p	ant	
or animal on the state or federal lists)		
It is mapped as a location for an individual WDFW priority specie	s	0
It is a Wetland of High Conservation Value as determined by the		0
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) with in 100m	points = 1	
Site does not meet any of the criteria above	points = 0	
Rating of Value       If Score is:       I       2 = H       I = M       I = M       I = C	ord 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.

http://wdfw.wa.gov/publications/00165/wdfw00165.pdf\_or access the list from here: http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- □ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: Old-growth west of Cascade crest Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- □ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- □ **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- □ **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- □ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report see web link on previous page*).
- **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- □ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- □ Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

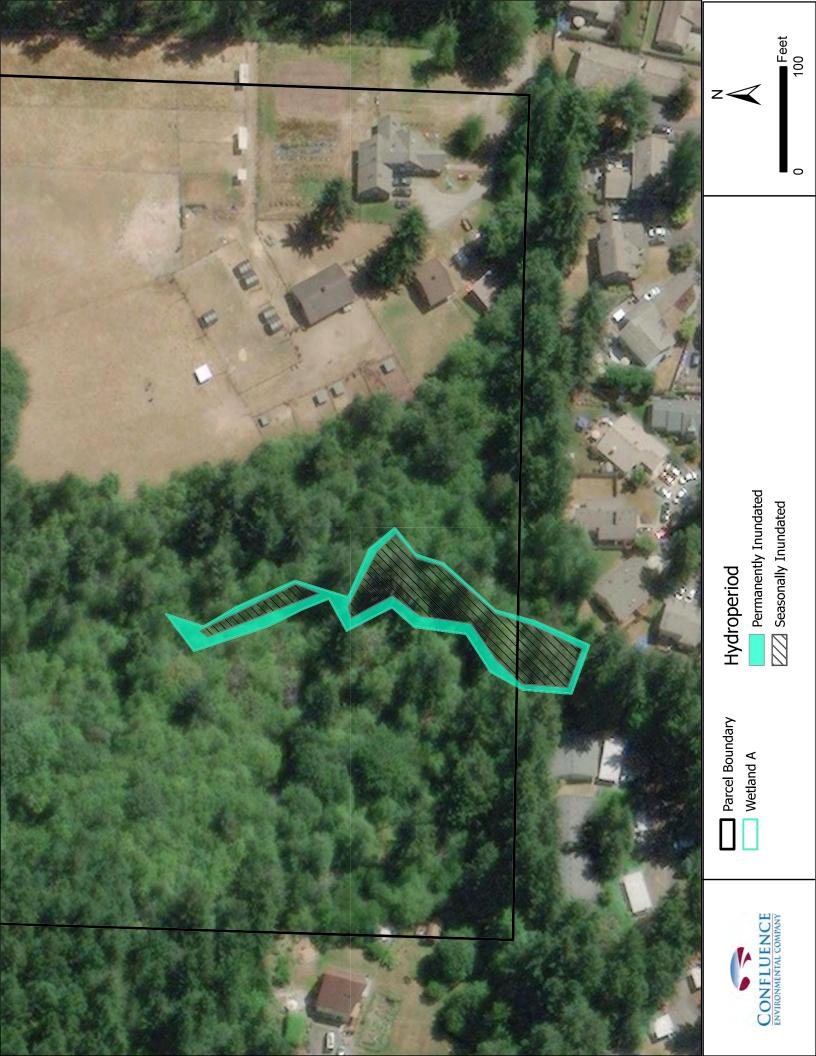
# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

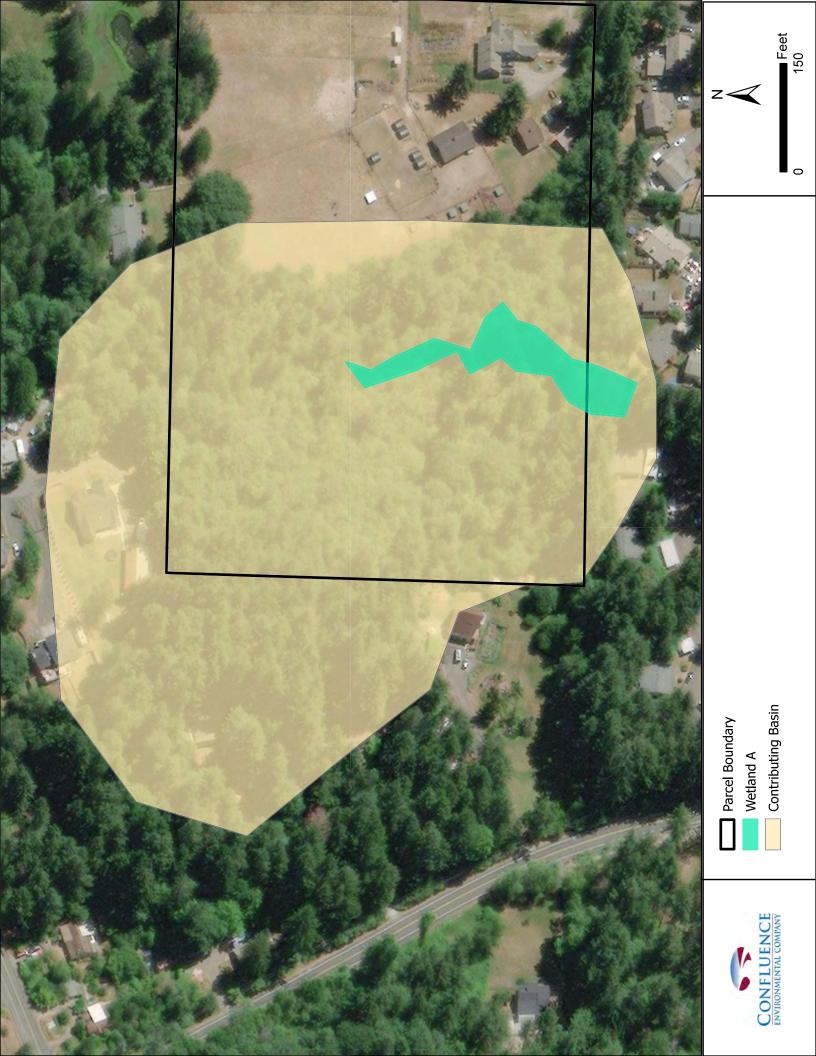
Wetland	Туре	Category		
	any criteria that apply to the wetland. List the category when the appropriate criteria are met.			
SC 1.0. I	Estuarine Wetlands			
	Does the wetland meet the following criteria for Estuarine wetlands?			
	The dominant water regime is tidal,			
	Vegetated, and			
	With a salinity greater than 0.5 ppt			
SC 1.1.	☐ Yes - Go to SC 1.1         ☑ No = Not an estuarine wetland           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?			
	$\Box \text{ Yes} = \text{Category I} \qquad \Box \text{ No - Go to SC 1.2}$			
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 <sup>3</sup> / <sub>4</sub> of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-			
	grazed or un-mowed grassland.			
	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. \	Vetlands 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?			
	✓ Yes - Go to SC 2.2 No - Go to SC 2.3			
SC 2.2.	5			
	□ Yes = Category I			
SC 2.3.				
	http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf			
	$\Box$ Yes - Contact WNHP/WDNR and to SC 2.4 $\Box$ No = Not WHCV			
SC 2.4.	•			
	Value and listed it on their website?			
00.0.0	□ Yes = Category I □ No = Not WHCV			
SC 3.0. I	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,			
00 5.1.	that compose 16 in or more of the first 32 in of the soil profile?			
	☐ Yes - Go to SC 3.3			
SC 3.2.	Does an area within the wetland unit have organic soils, either peats or mucks, that are			
000.2.	less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic			
	ash, or that are floating on top of a lake or pond?			
	□ Yes - Go to SC 3.3			
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?			
	□ Yes = Is a Category I bog □ No = Is not a bog			

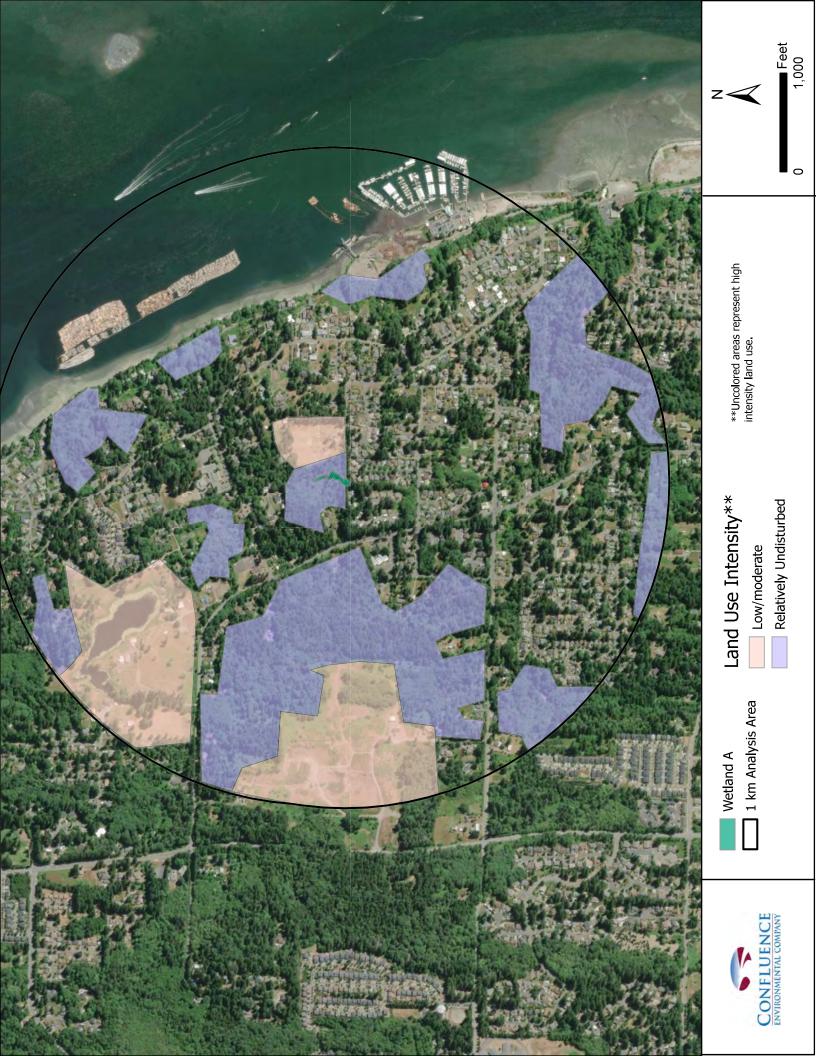
Wetland name or number A

SC 4 0 F	Forested Wetlands	
00 4.0.1	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</i>	
	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 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 Ves = No = Not a forested wetland for this section	
SC 5.0. \	Netlands 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 Wo = 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 <sup>3</sup> / <sub>4</sub> of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-	
	grazed or un-mowed grassland.	
	The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
50601	□ Yes = Category I □ No = Category II □ No = Category II	
30 0.0.1	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	
	$\Box$ Yes - Go to SC 6.1 $\Box$ 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)?	
	$\Box \text{ Yes} = \text{Category I} \qquad \Box \text{ No} - \text{Go to SC 6.2}$	
SC 6.2.	Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
	$\Box \text{ Yes} = \text{Category II} \qquad \Box \text{ No} - \text{Go to } \text{SC 6.3}$	
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	
	y of wetland based on Special Characteristics	
If you an	swered No for all types, enter "Not Applicable" on Summary Form	

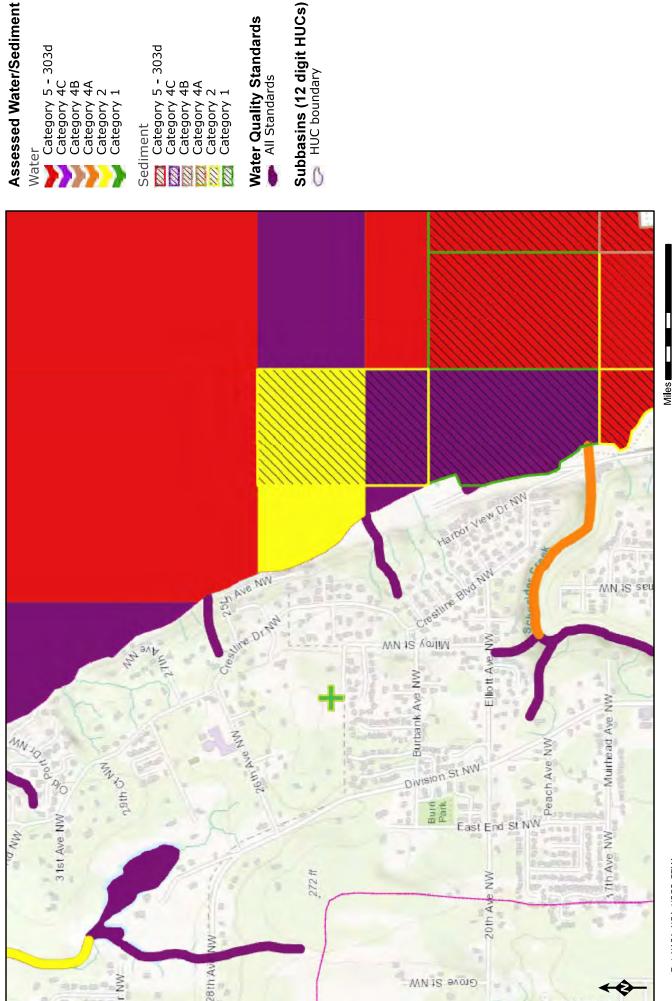








# WQA 303(d)





0.4

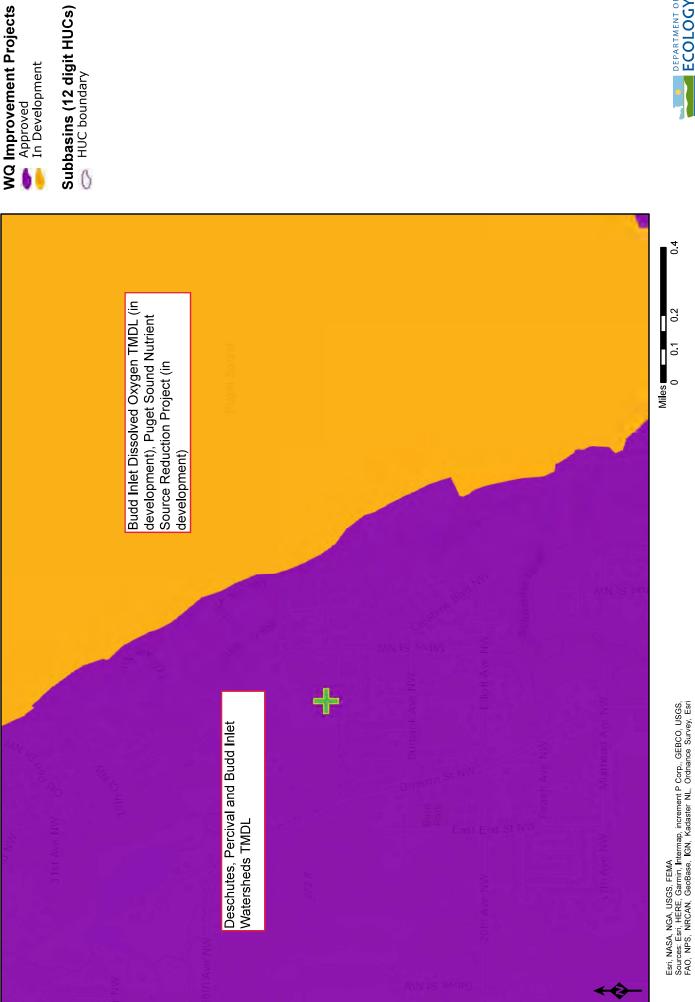
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Esri, INASA, NGA, USGS, FEMA Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

# WQA TMDLs





0.4

0.2

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):	Wetland B				Date of site visit:	7/19/	2023
Rated by A. Michniak & K. M	<b>Ic</b> Arthur	Trained by Ecology?	⊠ Yes□	No	Date of training	3/23 8	3 6/16
HGM Class used for rating	Depressional & Flats	Wetl	and has n	nultipl	e HGM classes?□	Yes 🛛	No
NOTE: Form is no	ot complete with out	t the figures request	ed (figure	es car	be combined ).		

Source of base aerial photo/map Esri, Maxar, Earthstat Geographics

OVERALL WETLAND CATEGORY \_\_\_\_\_ (based on functions<sup>III</sup> or special characteristics<sup>III</sup> )

## 1. Category of wetland based on FUNCTIONS

Category I - Total score = 23 -			
	<b>Category II -</b> Total score = 20 - 22		
	Category III - Total score = 16 - 19		
X	<b>Category IV -</b> Total score = 9 - 15		

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	Н	L	L	
Landscape Potential	М	М	L	
Value	Н	L	L	Tota
Score Based on Ratings	8	4	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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	x

# 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	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	2
Map of the contributing basin	D 4.3, D 5.3	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	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

### 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	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)	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	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)	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 dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to another figure )		
Boundary of area within 150 ft of the wetland (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 Wetland in Western Washington

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

- 1. Are the water levels in the entire unit usually controlled by tides except during floods?
  - NO go to 2
    YES the wetland class is Tidal Fringe go to 1.1
  - 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
  - NO Saltwater Tidal Fringe (Estuarine)
     YES Freshwater Tidal Fringe
     If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine
     wetlands. If it is Saltwater Tidal Fringe it is an Estuarine wetland and is not scored. This method
     cannot be used to score functions for estuarine wetlands.

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

- NO-go to 3
   YES The wetland class is Flats
   If your wetland can be classified as a Flats wetland, use the form for Depressional wetlands.
- 3. Does the entire wetland unit meet all of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
  - At least 30% of the open water area is deeper than 6.6 ft (2 m).
  - NO go to 4
    YES The wetland class is Lake Fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - □ The wetland is on a slope (*slope can be very gradual*),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - The water leaves the wetland without being impounded.
  - NO go to 5
    YES The wetland class is Slope

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

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

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

## 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.

NOTES and FIELD OBSERVATIONS:

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 welland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). poin Wetland has an intermittently flowing stream or ditch, OR highly	nts = 3
constricted permanently flowing outlet. point	nts = 2 3
<ul> <li>Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing</li> <li>point</li> </ul>	its = 1
<ul> <li>Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.</li> </ul>	its = 1
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions</i> ). Yes = 4	No = 0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area point	nts = 5
Wetland has persistent, ungrazed, plants > ½ of area point	nts = 3 5
Wetland has persistent, ungrazed plants > <sup>1</sup> / <sub>10</sub> of area point	nts = 1
Wetland has persistent, ungrazed plants < <sup>1</sup> / <sub>10</sub> of area point	nts = 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 point	nts = 4 4
	nts = 2
Area seasonally ponded is < ¼ total area of wetland point	nts = 0
Total for D 1 Add the points in the boxes	above 12

Rating of Site Potential If score is: 2 12-16 = H 2 6-11 = M 2 0-5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the v	vater 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 generate pollutants?	l uses that 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 w not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2	Add the points in the boxe	s above	1

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

	DEPRESSIONAL AND FLATS WETLANDS	S	
Hydr	rologic Functions - Indicators that the site functions to reduce flooding an	d stream degra	dation
0 4.0. Do	es the site have the potential to reduce flooding and erosion?		
0 4.1. Ch	aracteristics 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 outlet	points = 2	4
	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	
	pth of storage during wet periods: Estimate the height of ponding above the		
he outlet	. For wetlands with no outlet, measure from the surface of permanent wate	er or if dry,	
the deepe	est 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	0
	Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
	The wetland is a "headwater" wetland	points = 3	
	Wetland is flat but has small depressions on the surface that trap water	points = 1	
	Marks of ponding less than 0.5 ft (6 in)	points = 0	
0 4.3. <u>Co</u>	ntribution 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	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 more than 100 times the area of the unit	points = 0	
	Entire wetland is in the Flats class	points = 5	<u> </u>
Total for I	D 4 Add the points in the	boxes above	4

D 5.0. Does the landscape have the potential to support hydrologic function of the site?	
D 5.1. Does the wetland unit 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?	1
Yes = 1 No = 0	I
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.)?	0
Yes = 1 No = 0	
Total for D 5 Add 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

	and the state of the set of 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 wettand captures surface water that would otherwise now down-gradient into	
areas where flooding has damaged human or natural resources (e.g., houses or salmon	
radde).	
<ul> <li>Flooding occurs in a sub-basin that is immediately down-</li> </ul>	
gradient of unit. points = 2	0
<ul> <li>Surface flooding problems are in a sub-basin farther</li> </ul>	0
down-gradient. points = 1	
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 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	0
conveyance in a regional flood control plan? Yes = 2 No = 0	
Total for D 6 Add the points in the boxes above	0
Rating of Value If score is: 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: <i>Indicators are Cowardin classes and strata within the Forested class</i> . Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of 1⁄4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.	
<ul> <li>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>Istructure: points = 0</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, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon</li> </ul>	1
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</i> <i>hydroperiods</i> ).	
<ul> <li>Permanently flooded or inundated 4 or more types present: points = 3</li> <li>Seasonally flooded or inundated 3 types present: points = 2</li> <li>Occasionally flooded or inundated 2 types present: points = 1</li> <li>Saturated only 1 types present: points = 0</li> <li>Permanently flowing stream or river in, or adjacent to, the wetland</li> <li>Seasonally flowing stream in, or adjacent to, the wetland</li> <li>Lake Fringe wetland 2 points</li> </ul>	1
Image: Freshwater tidal wetland2 pointsH 1.3. Richness of plant speciesCount 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	1
If you counted: > 19 species points = 2 5 - 19 species points = 1 < 5 species points = 0	
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and</i> <i>open water, the rating is always high.</i> None = 0 points Low = 1 point Moderate = 2 points All three diagrams	0
in this row are HIGH = 3 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) 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</i> <i>shrubs or trees that have not yet weathered where wood is exposed</i> ) At reast 74 ac or unit-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated ( <i>structures for egg-laying by</i> <i>amphibians</i> ) Invasive plants cover less than 25% of the wetland area in every stratum of plants	2
۵		
Total for	H 1 Add the points in the boxes above	5

Rating of Site Potential If Score is: D 15 - 18 = H D 7 - 14 = M D 0 - 6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat function of	of the site?	
H 2.1 Accessible habitat (include only habitat that directly abuts wetland unit	).	
Calculate:	, 	
1 % undisturbed habitat + ( 1 % moderate & low intensity lar	nd uses / 2 ) = 1.5%	
·, ·	,	
If total accessible habitat is:		0
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	
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:		
21 % undisturbed habitat + (1 % moderate & low intensity lar	nd uses / 2 ) = 26.5%	
		2
Undisturbed habitat > 50% of Polygon	points = 3	2
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	
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 1km Polygon is high intensity	points = 0	
Total for H 2 Add the points	in the boxes above	0

Rating of Landscape Potential If Score is: 4 - 6 = H = 1 - 3 = M = <1 = L Record the rating on the first page

H 3.0. Is the habita	at provided by the site valuable to society?		
H 3.1. Does the sit	te provide habitat for species valued in laws, regulations, o	r policies? Choose	
only the highest so	core that applies to the wetland being rated .		
Site mee	ets ANY of the following criteria:	points = 2	
	It has 3 or more priority habitats within 100 m (see next pa	age)	
	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	0
	It is a Wetland of High Conservation Value as determined	by the	0
	Department of Natural Resources		
	It has been categorized as an important habitat site in a lo	ocal 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) with in 100m	points = 1	
Site does	s not meet any of the criteria above	points = 0	
Rating of Value If S	Score is:□ 2 = H □ 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.

http://wdfw.wa.gov/publications/00165/wdfw00165.pdf\_or access the list from here: http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- B 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.

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland	Туре	Category
Check off	any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
	stuarine 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.	
00 0 0 V	Yes = Category I     No = Category II     No = Category II	
	Vetlands of High Conservation Value (WHCV) Has the WA Department of Natural Resources updated their website to include the list	
SC 2.1.	of Wetlands of High Conservation Value?	
	If we lands of Fligh Conservation value? If Yes - Go to SC 2.2 No - Go to SC 2.3	
SC 2.2.	Is the wetland listed on the WDNR database as a Wetland of High Conservation Value	
00 2.2.	□ Yes = Category I □ No = Not WHCV	
SC 2.3.	Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
00 2.0.	http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
	Yes - Contact WNHP/WDNR and to SC 2.4 No = Not 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 WHCV	
SC 3.0. E		
	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?	
	Yes - Go to SC 3.3 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?	
	□ Yes - Go to SC 3.3 □ 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	
	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	
SC 3.4.	present, the wetland is a bog.	
30 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	

C 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.	
	<b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac	
	(20 trees/ha) that are at least 200 years of age OR have a diameter at breast height	
	(dbh) of 32 in (81 cm) or more.	
	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).	
0.5.0	Yes = Category I      No = Not a forested wetland for this section	
C 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 ( <i>needs</i>	
	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 un-mowed grassland.	
	The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
0.0.0	Yes = Category I     No = Category II	
C 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 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	
	y of wetland based on Special Characteristics	



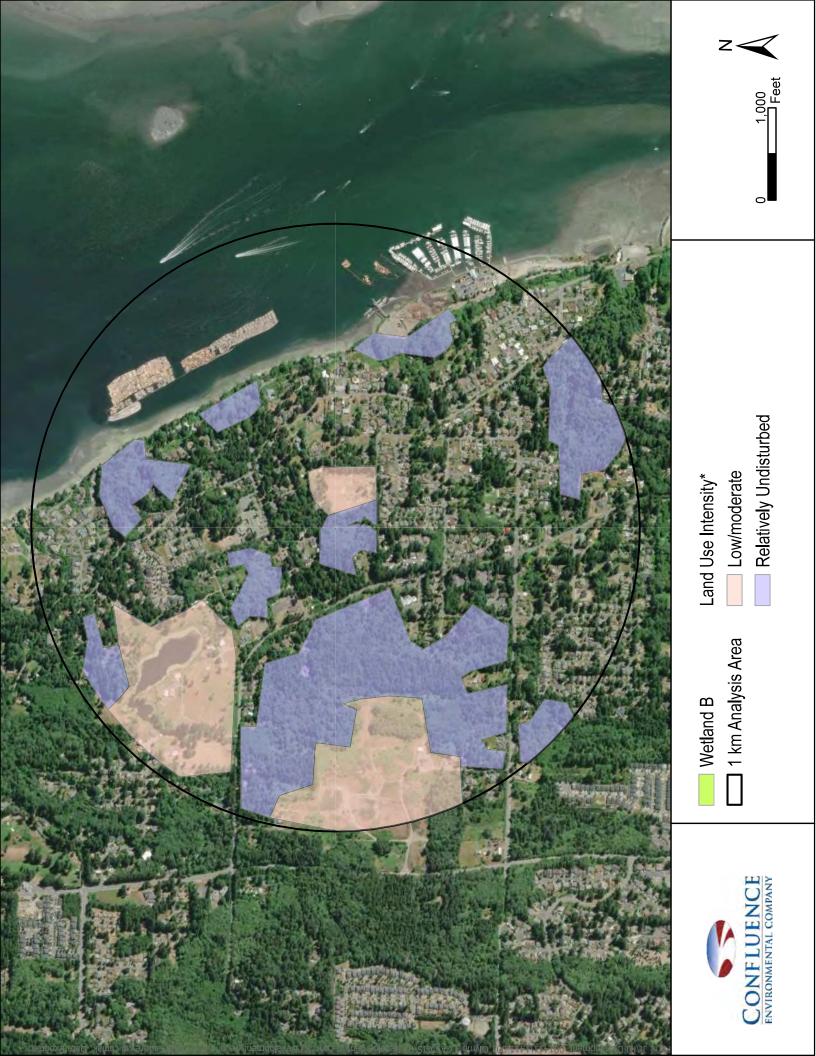
The Forested class has 3 out 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

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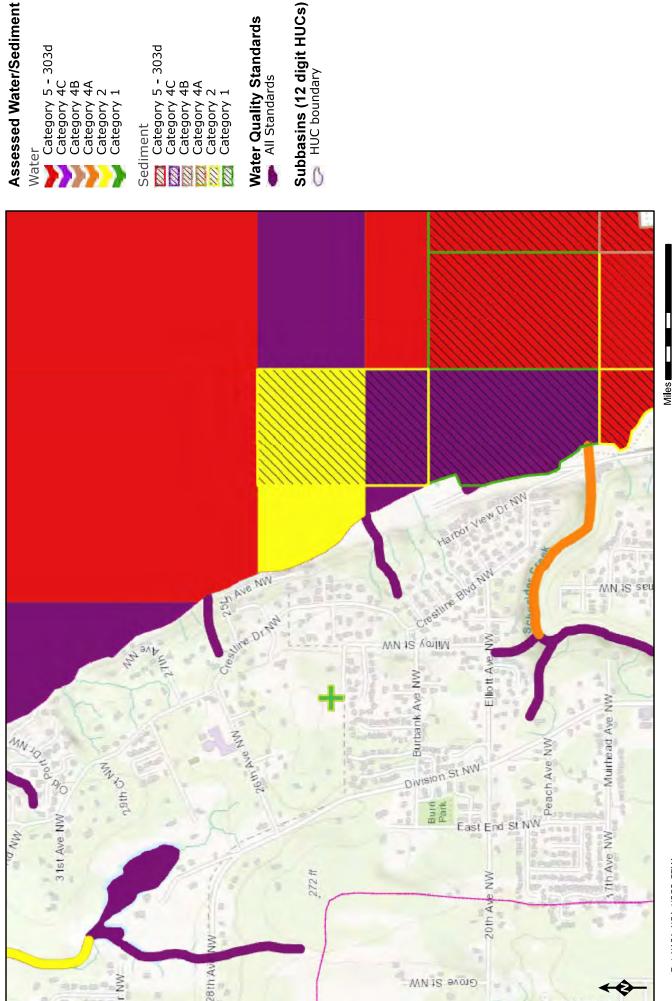








# WQA 303(d)





0.4

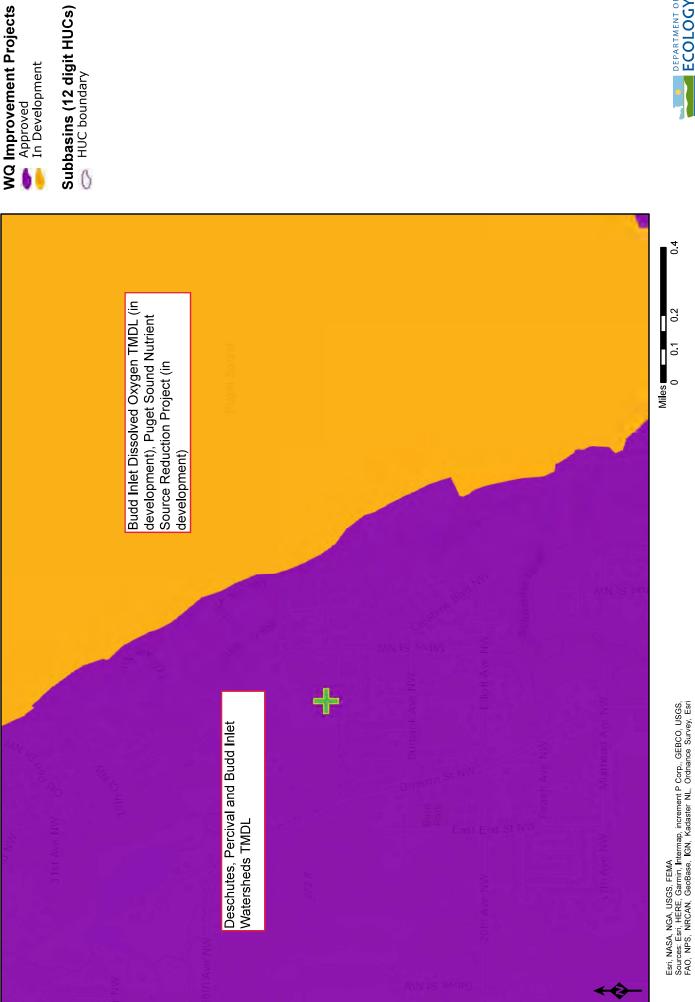
0.2

0.1

0

Esri, INASA, NGA, USGS, FEMA Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

# WQA TMDLs





0.4

0.2

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): Wetland C		Date of site visit:	7/19/2023
Rated by A. Michniak & K. McArthur	Trained by Ecology?⊠ Yes⊐	No Date of training	3/23 & 6/16
HGM Class used for rating Depressional & Flats	Wetland has r	nultiple HGM classes? <sup>D</sup>	Yes⊠ No
NOTE: Form is not complete with out Source of base aerial photo/n		,	

OVERALL WETLAND CATEGORY \_\_\_\_\_ (based on functions<sup>III</sup> or special characteristics<sup>III</sup> )

## 1. Category of wetland based on FUNCTIONS

	Category I - Total score = 23 - 27
	Category II - Total score = 20 - 22
	<b>Category III -</b> Total score = 16 - 19
X	Category IV - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List app	ropriate rating	7 (H, M, L)	
Site Potential	М	L	L	
Landscape Potential	М	М	L	
Value	Н	L	L	Tota
Score Based on Ratings	7	4	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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	x

# 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	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	2
Map of the contributing basin	D 4.3, D 5.3	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	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

### 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	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)	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	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)	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 dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to another figure )		
Boundary of area within 150 ft of the wetland (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 Wetland in Western Washington

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

- 1. Are the water levels in the entire unit usually controlled by tides except during floods?
  - NO go to 2
    YES the wetland class is Tidal Fringe go to 1.1
  - 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
  - NO Saltwater Tidal Fringe (Estuarine)
     YES Freshwater Tidal Fringe
     If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine
     wetlands. If it is Saltwater Tidal Fringe it is an Estuarine wetland and is not scored. This method
     cannot be used to score functions for estuarine wetlands.

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

- NO-go to 3
   YES The wetland class is Flats
   If your wetland can be classified as a Flats wetland, use the form for Depressional wetlands.
- 3. Does the entire wetland unit meet all of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
  - At least 30% of the open water area is deeper than 6.6 ft (2 m).
  - NO go to 4
    YES The wetland class is Lake Fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - The wetland is on a slope (slope can be very gradual),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - The water leaves the wetland without being impounded.
  - NO go to 5
    YES The wetland class is Slope

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

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

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

## 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 class to
use in rating
Riverine
Depressional
Lake Fringe
Depressional
Depressional
Riverine
Treat as
ESTUARINE

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

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water q	uality
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). point	s = 3
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. point	s = 2 3
<ul> <li>Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points</li> </ul>	5 = 1
<ul> <li>Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.</li> </ul>	5 = 1
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions</i> ). Yes = 4 N	0 = 0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area point	s = 5
Wetland has persistent, ungrazed, plants > ½ of area point	s = 3 3
Wetland has persistent, ungrazed plants > <sup>1</sup> / <sub>10</sub> of area point	s = 1
Wetland has persistent, ungrazed plants $< 1/10$ of area point	s = 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 point	s = 4 4
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland point	s = 2
Area seasonally ponded is < ¼ total area of wetland point	s = 0
Total for D 1 Add the points in the boxes a	bove 10

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

D 2.0. Does the landscape have the potential to support the v	vater 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 generate pollutants?	l uses that 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 w not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2	Add the points in the boxe	s above	1

Rating of Landscape Potential If score is 3 or 4 = H a 1 or 2 = M 0 = LRecord 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</i> <i>which the unit is found</i> )? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	e 3
Rating of Value If score is:       2 - 4 = H       1 = M       0 = L       Record the rating of the statement	n the first page

	Irologic Functions - Indicators that the site functions to reduce flooding an	u sileani uegra	Jation
	oes the site have the potential to reduce flooding and erosion?		
D 4.1. <u>C</u>	haracteristics 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 outlet	points = 2	4
	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	
	epth of storage during wet periods: Estimate the height of ponding above th		
	at. For watlands with no outlet, measure from the surface of permanent wate	er or if dry,	
the deep	best 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	0
	Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
	The wetland is a "headwater" wetland	points = 3.	
	Wetland is flat but has small depressions on the surface that trap water	points = 1	
	Marks of ponding less than 0.5 ft (6 in)	points = 0	
	ontribution of the wetland to storage in the watershed: Estimate the ratio of		
upstrear	n 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	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 more than 100 times the area of the unit	points = 0	
	Entire wetland is in the Flats class	points = 5	
Total for	D 4 Add the points in the	boxes above	4

D 5.0. Does the landscape have the potential to support hydrologic function of the site?	
D 5.1. Does the wetland unit 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	I
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	1

Rating of Landscape Potential If score is: 
3 = H
1 or 2 = M
0 = L
Record the rating on the first page

	A second of a second	and the second sec
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 des	scription 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 wellahu captures surface water that would otherwise now down	<u> </u>	
areas where flooding has damaged human or natural resources (e.	g., houses or salmon	
rodde).		
<ul> <li>Flooding occurs in a sub-basin that is immediately down-</li> </ul>		
gradient of unit.	points = 2	0
<ul> <li>Surface flooding problems are in a sub-basin farther</li> </ul>		0
down-gradient.	points = 1	
<ul> <li>Flooding from groundwater is an issue in the sub-basin.</li> </ul>	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	k	
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		0
conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6 Add the points	s in the boxes above	0
Rating of Value If score is: 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: <i>Indicators are Cowardin classes and strata within the Forested class</i> . Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of 1⁄4 ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.	
<ul> <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>Istructure: points = 0</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, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon</li> </ul>	1
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</i> <i>hydroperiods</i> ).	
<ul> <li>Permanently flooded or inundated</li> <li>Seasonally flooded or inundated</li> <li>Occasionally flooded or inundated</li> <li>Occasionally flooded or inundated</li> <li>Saturated only</li> <li>Permanently flowing stream or river in, or adjacent to, the wetland</li> <li>Seasonally flowing stream in, or adjacent to, the wetland</li> </ul>	1
Lake Fringe wetland       2 points         Freshwater tidal wetland       2 points	
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	1
5 - 19 species points = 1 < 5 species points = 0	
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and</i> <i>open water, the rating is always high.</i>	
	0
None = 0 pointsLow = 1 pointModerate = 2 points	
All three diagrams in this row are HIGH = 3 points	

	pecial habitat features: The habitat features that are present in the wetland. <i>The number of checks is the number</i>	
of points		
Ø	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)	2
	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 74 ac of thing-stemmed persistent plants of woody plantices are present in	
	areas that are permanently or seasonally inundated ( <i>structures for egg-laying by</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 1 Add the points in the boxes above	5

Rating of Site Potential If Score is: D 15-18 = H D 7-14 = M D 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat function of	of the site?	
H 2.1 Accessible habitat (include only habitat that directly abuts wetland unit	).	
Calculate:	,	
1 % undisturbed habitat + ( 1 % moderate & low intensity lar	nd uses / 2 ) = 1.5%	
·	,,	
If total accessible habitat is:		0
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	
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:		
21 % undisturbed habitat + (1 % moderate & low intensity lar	nd uses / 2 ) = 26.5%	
		2
Undisturbed habitat > 50% of Polygon	points = 3	2
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	
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 1km Polygon is high intensity	points = 0	
Total for H 2 Add the points	in the boxes above	0

Rating of Landscape Potential If Score is: 4 - 6 = H = 1 - 3 = M = <1 = L Record the rating on the first page

H 3.0. Is the habita	at provided by the site valuable to society?		
H 3.1. Does the si	te provide habitat for species valued in laws, regulations, o	r policies? Choose	
only the highest se	core that applies to the wetland being rated .		
Site mee	ets ANY of the following criteria:	points = 2	
	It has 3 or more priority habitats within 100 m (see next pa	age)	
	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	0
	It is a Wetland of High Conservation Value as determined	by the	0
	Department of Natural Resources		
	It has been categorized as an important habitat site in a lo	ocal 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) with in 100m	points = 1	
Site doe	s not meet any of the criteria above	points = 0	
Rating of Value If	Score is:□ 2 = H □ 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.

http://wdfw.wa.gov/publications/00165/wdfw00165.pdf\_or access the list from here: http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.

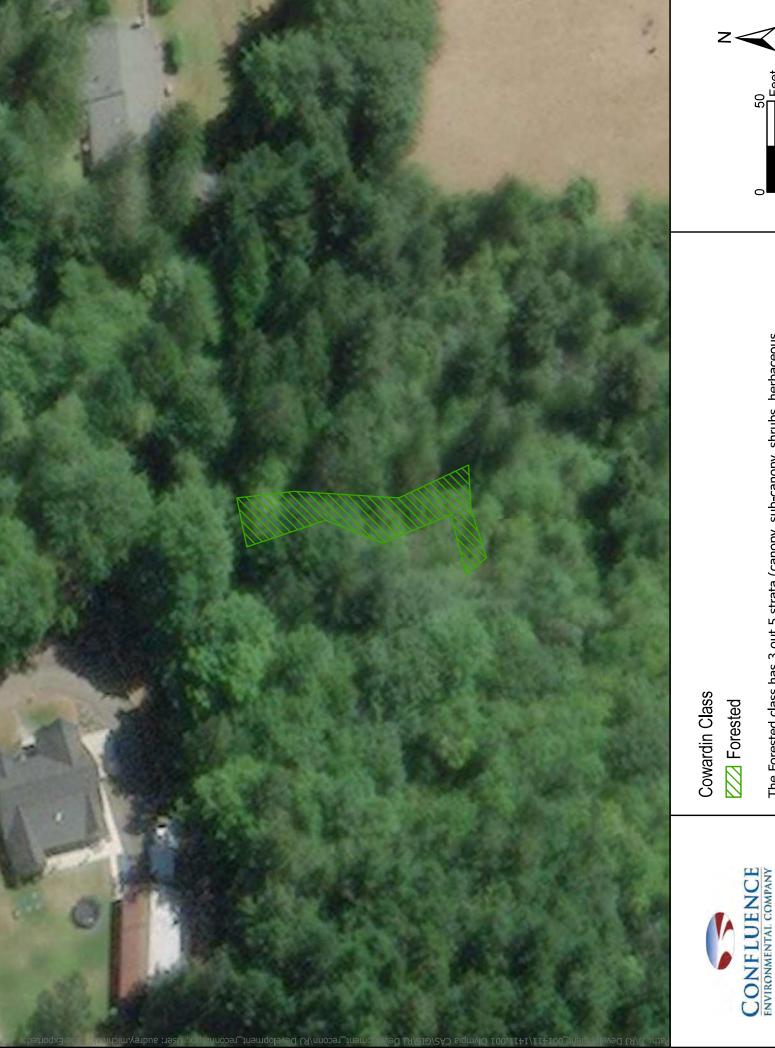
- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- B Herbaceous Balds: Variable size patches of grass and 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.

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland	CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS	Category
Check of	f any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
	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.	5	
	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 <sup>3</sup> / <sub>4</sub> of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or	
	un-grazed or un-mowed grassland.	
	The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	
	Pers = Category I No = Category II	
SC 2.0	Wetlands of High Conservation Value (WHCV)	
	Has the WA Department of Natural Resources updated their website to include the list	
00 2.1.	of Wetlands of High Conservation Value?	
	Yes - Go to SC 2.2 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 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 to SC 2.4 D No = Not 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 WHCV	
SC 3.0.	•	
	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	
00.04	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.	P Yes - Go to SC 3.3 P No - Go to SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that	
50 5.2.	are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or	
	volcanic ash, or that are floating on top of a lake or pond?	
	□ Yes - Go to SC 3.3 □ No = Is not a bog	
SC 3.3.	5	
00 0.0.	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,	
00 0.4.	, , , , , , , , , , , , , , , , , , , ,	
00 0.4.	western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann	
00 0.4.	spruce, or western white pine, AND any of the species (or combination of species)	
00 0.4.		

C 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 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 <ul> <li>No = Not a forested wetland for this section</li> </ul>	
C 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	
C 5.1. I	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 <sup>3</sup> / <sub>4</sub> of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or	
	un-grazed or un-mowed grassland.	
	The wetland is larger than $1/_{10}$ ac (4350 ft <sup>2</sup> )	
	Yes = Category I	
C 6.0.	nterdunal 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 Point No = Category IV	
	y of wetland based on Special Characteristics	



The Forested class has 3 out 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon



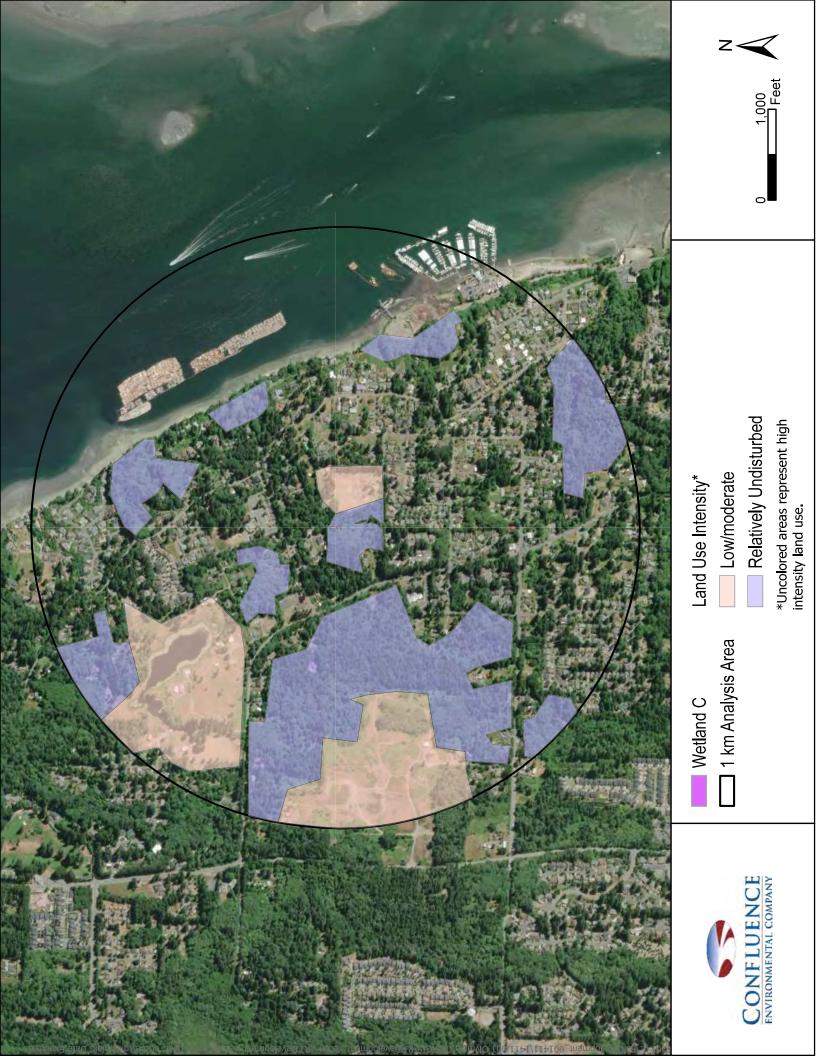




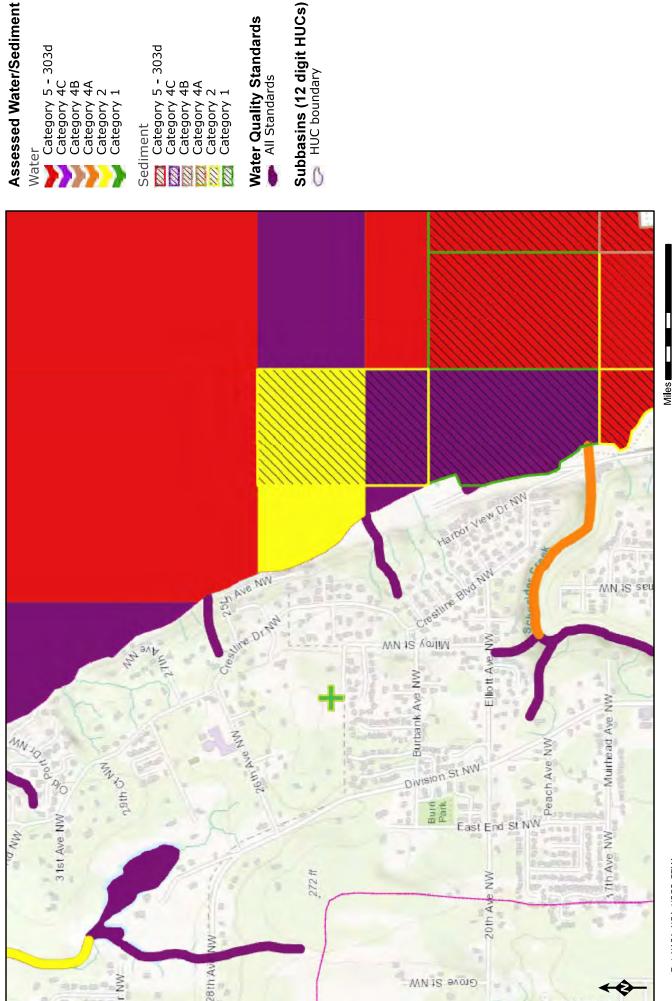
Wetland C
 Contributing Basin







## WQA 303(d)





0.4

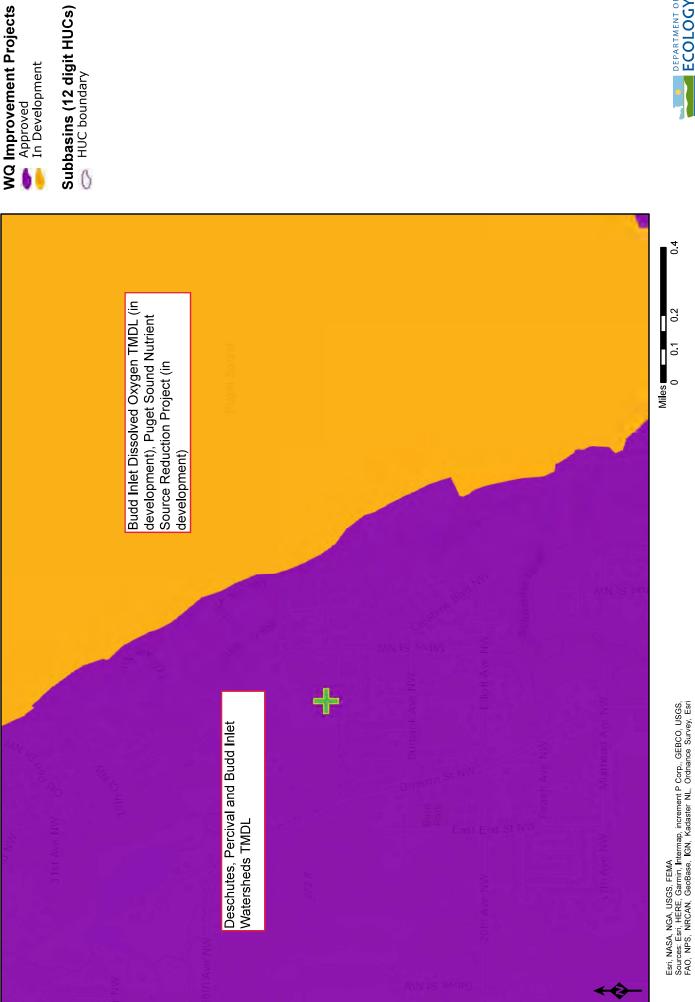
0.2

0.1

0

Esri, INASA, NGA, USGS, FEMA Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

# WQA TMDLs





0.4

0.2

### **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):	Off-Site Wetland		Date of site visit:	10/25/2022	
Rated by K. McArthur and N	I. Dietsch	Trained by Ecology? 🗹 Yes 🗌 No	Date of training	Mar-21	
HGM Class used for rating	Depressional & Flats	Wetland has multip	e HGM classes? 🗌	Yes 🗹 No	
<b>NOTE: Form is not complete with out the figures requested</b> ( <i>figures can be combined</i> ). Source of base aerial photo/map					
OVERALL WETLAND CA	TEGORY <u>IV</u>	(based on functions ⊡ or specia	I characteristics	)	
1. Category of wetland	l based on FUNCTI Category I - Total sc		Score for each		
	Cotomorry II. Totolo		function bood		

ON		proving er Quality	Hydrologic	Habitat	
	Х	_ • •	IV - Total scor		
		Category I	III - Total scor	re = 16 - 19	)
		Category II - Total score = 20 - 22			

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List app	ropriate rating	т (Н, М, L)	
Site Potential	М	М	L	
Landscape Potential	М	L	L	
Value	Н	L	L	Total
Score Based on Ratings	7	4	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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	x

### 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	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	N/A
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

### **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	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)	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	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)	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 dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to another figure )		
Boundary of area within 150 ft of the wetland (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 Wetland	nd in Western Washingtoı	n
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For questions 1 -7, the criteria described must apply to the entire unit being rated.
If 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?

  - 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
  - NO Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

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

- 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.
- 🗹 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.* 

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.

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLA	NDS	
Water Quality Functions - Indicators that the site functions to im	prove 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).	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	3
<ul> <li>Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing</li> <li>Wetland is a flat depression (QUESTION 7 on key), whose outlet is</li> </ul>	points = 1	
a permanently flowing ditch.	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions</i> ).	Yes = 4 No = 0	0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-sh Forested Cowardin classes):	rub, and/or	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	1
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	I
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	4
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland	points = 2	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1 Add the points	in the boxes above	8

Rating of Site Potential If score is:  $\Box$  12 - 16 = H  $\overline{\bigcirc}$  6 - 11 = M  $\Box$  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 u	uses that		0
generate pollutants?	Yes = 1	No = 0	0
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 we	tland that are		
not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2	Add the points in the boxe	s above	1

Rating of Landscape Potential If score is: 3 or 4 = H I I or 2 = M 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site value	uable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a lake, or marine water that is on the 303(d) list?	a stream, river, Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic re	esource 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 a maintaining water quality ( <i>answer YES if there is a TMDL for the which the unit is found</i> )?	•	2
Total for D 3	Add the points in the boxes above	3
Rating of Value If score is: $\boxed{2} \cdot 4 = H$ $\boxed{1} = M$ $\boxed{0} = L$	Record the rating or	the first page

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degra	adation	
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 outlet points = 2	4	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is		
a permanently flowing ditch points = 1		
Wetland has an unconstricted, or slightly constricted, surface outlet		
that is permanently flowing points = 0 D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of		
the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the		
deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7		
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5	3	
$\square$ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3	5	
$\square \text{ marks are at least 0.5 ft to < 2 ft from surface of bottom of outlet} \qquad \qquad \text{points = 3}$ $\square \text{ The wetland is a "headwater" wetland} \qquad \qquad \text{points = 3}$		
Wetland is flat but has small depressions on the surface that trap water points = 1		
Marks of ponding less than 0.5 ft (6 in) points = 0		
D 4.3. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of</i>		
upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
$\Box$ 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	3	
The area of the basin is more than 100 times the area of the unit points = 0		
$\Box$ Entire wetland is in the Flats class points = 5		
Total for D 4 Add the points in the boxes above	10	
<b>Rating of Site Potential</b> If score is: $\Box 12 - 16 = H$ $\Box 6 - 11 = M$ $\Box 0 - 5 = L$ Record the rating on		
D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit 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.)?	0	
Yes = 1 No = 0		
Total for D 5 Add the points in the boxes above	0	
<b>Rating of Landscape Potential</b> If score is: $\Box 3 = H$ $\Box 1$ or $2 = M$ $\Box 0 = L$ 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):		
<ul> <li>Flooding occurs in a sub-basin that is immediately down-</li> </ul>		
gradient of unit. points = 2	0	
<ul> <li>Surface flooding problems are in a sub-basin farther down-</li> </ul>	0	
gradient. points = 1		
$\Box$ 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	0	
conveyance in a regional flood control plan? Yes = 2 No = 0		
Total for D 6Add the points in the boxes aboveRating of Value If score is:2 - 4 = H1 = MIIIIIRecord the rating on	0	
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<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> <li>□ Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see</i></li> </ul>	1
<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> <li>Total for H 1</li> <li>Add the points in the boxes above</li> </ul>	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 function of the site?		
H 2.1 Accessible habitat (include only habitat that directly abuts w	vetland unit).	
Calculate:		
1 % undisturbed habitat + (1 % moderate & k	ow intensity land uses / 2 ) = 1.5%	
If total accessible habitat is:		0
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	
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:		
19 % undisturbed habitat + (8 % moderate & k	ow intensity land uses / 2 ) = 23%	
Undisturbed behittet $> 50\%$ of Delygen	points = 3	2
Undisturbed habitat > $50\%$ of Polygon		
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	
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 1km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	0

Rating of Landscape Potential If Score is: 4 - 6 = H 1 - 3 = M I < 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 policie	es? Choose	
only the highest score that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
It has 3 or more priority habitats within 100 m (see next page)		
It provides habitat for Threatened or Endangered species (any p	ant	
or animal on the state or federal lists)		
It is mapped as a location for an individual WDFW priority specie	es	0
It is a Wetland of High Conservation Value as determined by the		0
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) with in 100m	points = 1	
Site does not meet any of the criteria above	points = 0	
	ord 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.

http://wdfw.wa.gov/publications/00165/wdfw00165.pdf\_or access the list from here: http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE**: This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: Old-growth west of Cascade crest Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- □ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- □ **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- □ **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- □ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report see web link on previous page*).
- **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- □ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- □ Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

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

Wetland	Туре	Category
01		
	any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. I	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.	□ Yes - Go to SC 1.1       ☑ No = Not an estuarine wetland         Is the wetland within a National Wildlife Refuge, National Park, National Estuary	
30 1.1.	Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific	
	Reserve designated under WAC 332-30-151?	
	$\Box \text{ Yes} = \text{Category I} \qquad \Box \text{ No} - \text{Go to SC 1.2}$	
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 <sup>3</sup> / <sub>4</sub> of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-	
	grazed or un-mowed grassland.	
	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. \	Netlands of High Conservation Value (WHCV)	
	Has the WA Department of Natural Resources updated their website to include the list	
	of Wetlands of High Conservation Value?	
	✓ Yes - Go to SC 2.2 □ No - Go to SC 2.3	
SC 2.2.	5	
	□ 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 to SC 2.4 □ No = Not 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 WHCV	
SC 3.0. I		
	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?	
	☐ Yes - Go to SC 3.3 ☑ 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?	
	$\Box \text{ Yes - Go to SC 3.3} \qquad \blacksquare \text{ No = Is not a bog}$	
SC 3.3.	Does an area with peats or mucks have more than 70% cover of mosses at ground	
30 3.3.	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?	
	🗌 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</i>	
	answer YES you will still need to rate the wetland based on its functions.	
	<b>Old-growth forests</b> (west of Cascade crest): Stands of at least two tree species,	
	forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac	
	(20 trees/ha) that are at least 200 years of age OR have a diameter at breast height	
	(dbh) of 32 in (81 cm) or more.	
	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 Vo = Not a forested wetland for this section	
SC 5.0. \	Netlands 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 Wo = 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. I	nterdunal 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	
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	
Categor	y of wetland based on Special Characteristics	
If you an	swered No for all types, enter "Not Applicable" on Summary Form	

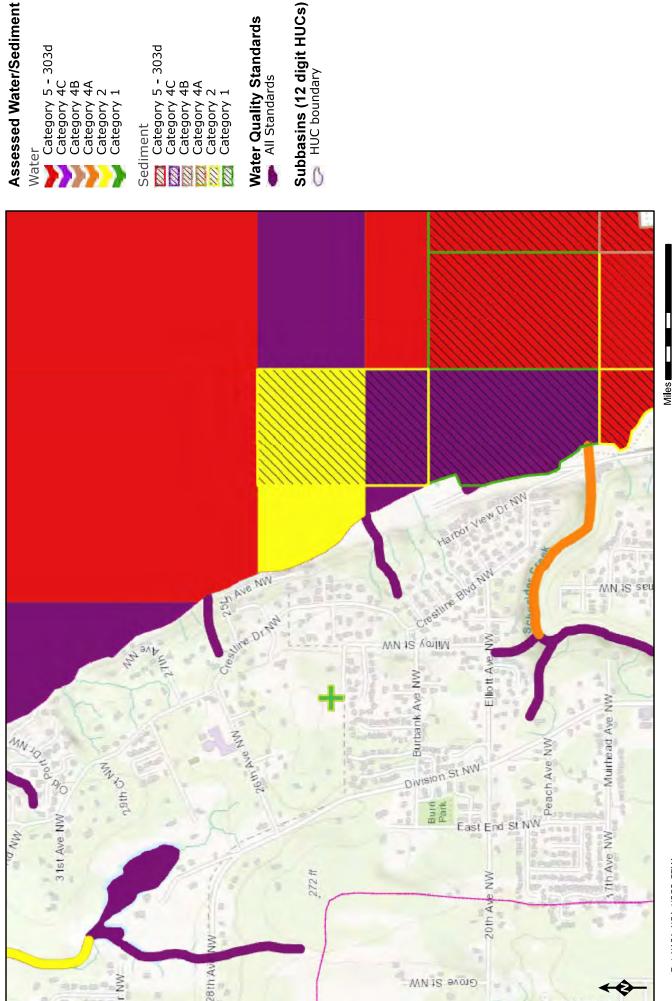








## WQA 303(d)





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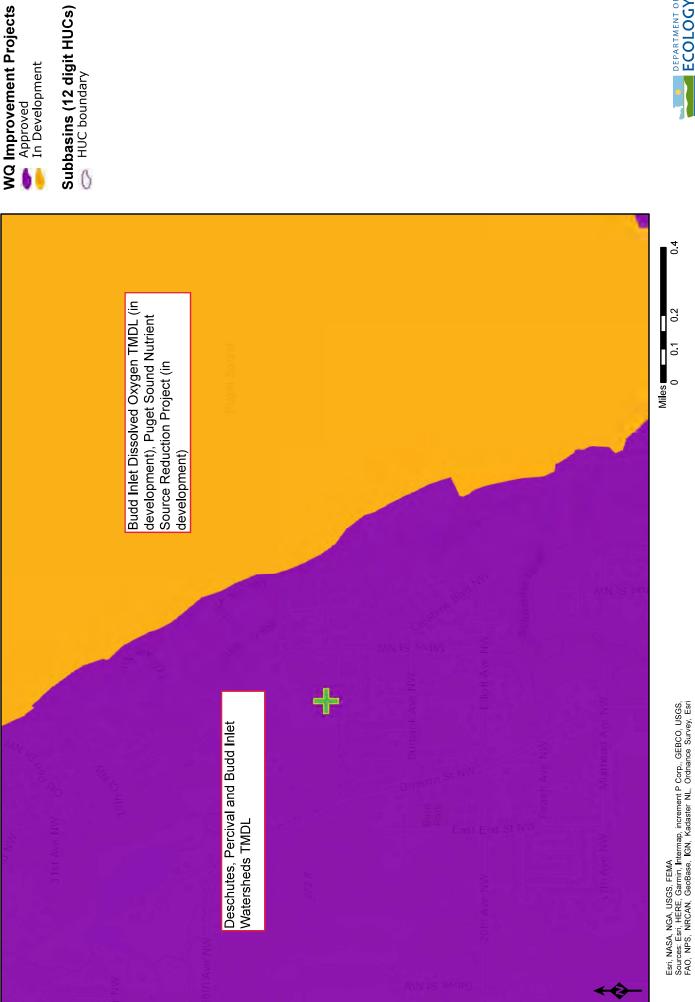
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Esri, INASA, NGA, USGS, FEMA Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

# WQA TMDLs





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### Appendix E Site Photographs





Photo 1. Soil profile at TP-1



Photo 2. View to north from TP-1





Photo 3. View to east from TP-1



Photo 4. View to south from TP-1





Photo 5. View to west from TP-1



Photo 6. Soil profile at TP-2





Photo 7. View to west from TP-2



Photo 8. View to north from TP-2





Photo 9. View to west from TP-2



Photo 10. View to south from TP-2





Photo 11. Soil profile at TP-3



Photo 12. View to south from TP-3





Photo 13. View to north from TP-3



Photo 14. View to east from TP-3



Photo 15. Soil profile at TP-4



Photo 16. View to north from TP-4





Photo 17. View to south from TP-4



Photo 18. View to west from TP-4





Photo 19. View to east from TP-4



Photo 20. Soil profile at TP-5





Photo 21. View to north from TP-5



Photo 22. View to east from TP-5





Photo 23. View to south from TP-5



Photo 24. Soil profile at TP-6





Photo 25. View to north from TP-6



Photo 26. View to south from TP-6





Photo 27. View to east from TP-6



Photo 28. Soil profile at TP-7





Photo 29. View to south from TP-7



Photo 30. View to north from TP-7





Photo 31. Soil profile at TP-8



Photo 32. View to south from TP-8





Photo 33. View to east from TP-8



Photo 34. Soil profile at TP-9





Photo 35. View to south from TP-9 (Note TP-8 flag in center of picture)



Photo 36. View to north from TP-9





Photo 37. Soil profile at TP-10



Photo 38. View to east from TP-10 (Note Wetland C boundary flag in center of picture)





Photo 39. View to south from TP-10



Photo 40. View of property facing east. Much of the property is currently in agricultural uses.





Photo 41. View of off-site wetland from northern property boundary

