# WETLAND DELINEATION

Meyers Way Remainder Property Seattle, Washington

July 15, 2011

# **RAEDEKE ASSOCIATES, INC.**

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#### **1.0 INTRODUCTION**

### **1.1 PURPOSE**

Raedeke Associates, Inc. was retained by the City of Seattle to conduct field investigations and delineation of the wetlands within their property known as the Meyers Way Remainder, hereafter referred to as MWR. The objective of our study is to provide baseline biological information for the existing conditions of wetlands located within the project site.

Mr. Emmett Pritchard, Mr. Christopher Wright, and Mr. Joel Merriman of Raedeke Associates, Inc. visited the site on three occasions during the period from May 3 to May 13, 2011 to investigate the property and its vicinity for the presence of wetlands. Raedeke Associates, Inc. (2001) staff had previously conducted a wetland reconnaissance of the site in March 2001.

### **1.2 PROJECT LOCATION**

The City of Seattle Myers Way Remainder Property is located at 9501 Meyers Way South (Parcel B), 9701 Meyers Way South (Parcel C), and 9600 Meyers Way South (Parcel D) in Seattle, Washington (Figures 1, 2, and 6). The Myers Way Remainder Property, encompass 10 King County tax parcels (322404982, 0523049012, 0523049013, 0523049024, 0523049052, 0523049057, 0523049058, 0523049059, 0623049001, and 0623049053) totaling approximately 38.5 acres. The study area is located within Sections 31 and 32, Township 24 North, Range 4 East, W.M. and Sections 5 and 6, Township 23 North, Range 4 East, W.M., in the City of Seattle, King County, Washington.

Parcels B and C are located on the west side of Meyers Way South and Parcel D is located on the east side (Figure 6). The study area is adjacent to and south of the Seattle Fire Department and Public Utilities Joint Training Facilities (JTF). The western and southern limits of the study area extend to the top of steep slopes that form the property boundaries. The King County Housing Authority Greenbridge Development abuts the west property boundary. The eastern limit of the study area abuts the State Route (SR) 509. A Seattle City Light power line right-of-way lies between Parcels B and C and bisects Parcel D. Our study area included all areas within 200 feet of the property boundaries that could be observed from within the project site or from public access areas, in order to assess potential buffers of off-site wetland buffers that may extend into the property.

### **1.3 SITE DESCRIPTION**

The majority of the site (Parcels B and C) consists of an abandoned sand and gravel mine operated from approximately 1920 until the early 1990's (City of Seattle 1986, 1991). Mining has removed several hundred feet of material leaving an east-sloping grade overlooking the Lower Duwamish alluvial plain (WDOE 2007). Permits to mine the site expired in 1991; however, mining and reclamation activities occurred within the property as recently as 2001, resulting in a grading violation that was investigated and resolved by the City of Seattle in April 2001 (City of Seattle 1991, 2001). Some localized grading within the northernmost portion of Parcel B occurred in 2005 during construction of the Seattle JTF (City of Seattle 2004). As a result of the previous mining activities, most of the site soils are disturbed, including large areas of compaction, fill material, mining spoils, and gravel pads. The site contains many water

collection and conveyance features (ditches, culverts, and infiltration areas) that appear to have been excavated during mining or reclamation activities.

Steep, east-facing slopes created during previous mining operations form the western boundary of Parcel B (Figure 6, Photo 1). The majority of Parcel B is flat or slopes gently to the east and northeast with the exception of an approximately 4-acre, square-shaped, excavated depression located at the toe of the steep slopes in the southwest corner of the parcel (Photo 2). The western portion of Parcel C consists of a ravine that opens to become a shallow swale near Meyers Way South. Moderate to very steep slopes created during site mining form the south boundary of Parcel C. Parcel D consists nearly entirely of steep slopes that extend down from Meyers Way South to the SR-509 right-of-way.

Vegetation within the majority of the site west of Meyers Way South is dominated by species that are adapted to disturbance and are well suited to both wetland and upland environments. Slopes that form the southern boundary of the site and slopes that make up the majority of Parcel D are forested, dominated by a mix of native and non-native tree and shrub species (Photos 3 and 4).

# **1.4 WEATHER CONDITIONS**

The weather had been unseasonably wet during the 60 days prior to our investigation. More than 169% of the normal rainfall for the combined months of March and April was recorded at the National Weather Service station at Seattle-Tacoma International Airport (Seattle Times 2011a, 2011b). In addition, measurable precipitation was recorded for nine consecutive days, totaling more than 1.5 inches, prior to our initial site visit on May 3, 2011 and precipitation continued to occur periodically over the ten day-period of our investigation (Seattle Times 2011a, 2011b). As a result, puddles were present in shallow depressions and in tire ruts throughout much of the upland in the mined portion of the property west of Meyers Way South.

#### 2.0 METHODS

#### 2.1 DEFINITIONS AND METHODOLOGIES

Wetlands and streams are protected by federal law as well as by state and local regulations. Federal law (Section 404 of the Clean Water Act) prohibits the discharge of dredged or fill material into "Waters of the United States", including certain wetlands, without a permit from the U.S. Army Corps of Engineers (COE 2007). The COE makes the final determination as to whether an area meets the definition of a wetland and whether the wetland is under their jurisdiction.

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions. Delineation of the ordinary high water mark (OHWM) of streams found within the project site was based upon the Washington State Shorelines Management Act of 1971 definitions found in RCW 90.58.030(2) (b) and WAC173-22-030(6).

Although the site conditions have been disturbed historically as a result of mining and reclamation activities, the most recent activities appear to have taken place more than six years ago. These occurred within the northern portion of the property during construction of the City of Seattle JTF site in 2005. Mining and reclamation activities within the remainder of the property ended more than ten years ago in 2001 (City of Seattle 2001). We used the "Routine Determination" method as described in Section D of the COE (Environmental Laboratory 1987) wetland delineation manual to identify on-site wetlands. A previous wetland investigation within the northern portion of the property conducted by Herrera Environmental Consultants, Inc. (2008) during April and May 2008 utilized the "Atypical Situations" method as described in Section F of the COE (Environmental Laboratory 1987) wetland delineation manual. This was likely the appropriate method to use at the time of their study because much of the area encompassed by their investigation had been disturbed within three to six years prior to their investigation. However, due to the length of time that has elapsed since the most recent mining of the property, it is our opinion that the "normal circumstance" now exist within the property as defined under U.S. Army Corps of Engineers Regulatory Guidance Letters 82-2, 86-09, and 90-07 and that the "Routine Determination" method is appropriate to be used for wetland determinations within the site.

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Register 1986:41251).

As outlined in the 1987 wetland delineation manual, wetlands are distinguished by three diagnostic characteristics: hydrophytic vegetation (wetland plants), hydric soil (wetland soil),

and wetland hydrology. Hydrophytic vegetation is defined as "macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Environmental Laboratory 1987). The U.S. Fish and Wildlife Service (USFWS) Wetland Indicator Status (WIS) ratings were used to make this determination (Reed 1988, 1993). The WIS ratings "reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species" (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as "a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if water tables were shallower than about 12 inches below the soil surface during this time period.

Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as driftlines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

In May 2010, the U.S. Army Corps of Engineers released the Regional Supplement to the Corps of Engineers Delineation Manual: Western Mountains, Valleys, and Coasts Region (COE 2010; referred to from here forward as the "Regional Supplement"). The purpose for developing this Regional Supplement as well as regional supplements for other regions of the U.S. was to provide region-specific hydrophytic vegetation, hydric soil, and hydrology indicators, as well as to address issues and technical problems that are specific to the region. We used the indicators and methodologies outlined in the Regional Supplement to make our wetland determination, as the Regional Supplement is required by the Army Corps of Engineers and reflects the latest in scientific consensus regarding the determination of wetland boundaries.

### 2.2 BACKGROUND RESEARCH

We collected and analyzed background information available for the site prior to the on-site investigation. We collected maps and information from the U.S. Fish and Wildlife Service National Wetland Inventory (USFWS NWI 2011), the City of Seattle Department of Planning and Development on-line Critical Areas Inventory (2011b) the U.S.D.A. Soil Conservation

Service (SCS; Snyder et al. 1973), the U.S.D.A Natural Resources Conservation Service Web Soil Survey (2011), and the Washington State Department of Natural Resources (WDNR 2011) Forest Practice Activity Map. We reviewed aerial photographs (Google Maps 2011, Microsoft Bing Maps 2011) to assist in the definition of existing plant communities, drainage patterns, and land use.

We also reviewed information presented in previous studies for the site including the following documents:

- Final Environmental Impact Statement for Central Heights Business Park. City of Seattle Document C6.95. April 1986;
- Wetland Reconnaissance for the Nintendo-Meyers Way South Property, Seattle, Washington. Raedeke Associates, Inc. Report submitted to Mr. Alan N. Safer, Property Counselors. March 30, 2001;
- Drainage Routes from the Joint Training Facility, Seattle, Washington. AMEC. Technical Memorandum for JTF project managers, Shiels Obletz Johnson, Inc. February 7, 2007;
- Investigation CELP Complaint Dated August 29, 2007 Regarding Seattle Joint Training Facility (JTF)). Washington Department of Ecology. Technical Memorandum to Mr. Dan Swenson. September 20, 2007;
- Wetland Delineation for the Seattle Fleets and Facilities Department Meyers Way SW Excess Property (Site #1). Hererera Environmental Consultants, Inc. Draft Report prepared for City of Seattle Fleets and Facilities Department, Real Estate Services Division. June 4, 2008.

### 2.3 FIELD SAMPLING PROCEDURES

During our field investigation, we inventoried, classified, and described representative areas of plant communities, soil profiles, and hydrologic conditions in both uplands and wetlands. We searched specifically for areas with positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology.

Vegetation, soils, and hydrology were examined in representative portions of the study area according to the procedures described in the Regional Supplement (COE 2010). Plant communities were inventoried, classified, and described during our field investigation. We estimated the percent coverage of each species. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (1976), with nomenclature as updated by USDA NRCS (2011). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the presence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 18 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2000) or the EarthColors Soil Color Book (Color Communications 1997). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

Our evaluation of the wetland boundaries was based on the presence of hydric soil, hydrophytic vegetation, and indicators of wetland hydrology. Topographic changes within the context of the landscape were used to aid in our delineation of the wetland boundaries. Our delineation was professionally surveyed by Goldsmith and Associates, Inc. and is depicted on maps received in our office from them on June 9, 2011.

#### 3.0 EXISTING CONDITIONS

#### 3.1 RESULTS OF BACKGROUND INVESTIGATION

## 3.1.1 National Wetland Inventory

The USFWS (2011, Figure 3) NWI, depicts three freshwater emergent and freshwater forested/shrub wetlands within the north portion of the project site, west of Meyers Way South. The NWI also depicts a freshwater forest/shrub and a riverine wetland in the northeast corner of the project site, east of Meyers Way South. In addition, several freshwater emergent and freshwater forested/shrub wetlands are depicted off-site within the City of Seattle JTF property, within 200 feet of the Myers Way Remainder Property.

Wetlands shown on the NWI are general in terms of location and extent, as they are determined primarily from aerial photographs. Thus, the number and areal extent of existing wetlands located within the project area may differ from those marked on an NWI map.

# 3.1.2 City of Seattle DPD GIS Maps

The City of Seattle (2011b; Figure 4) Department of Planning and Development GIS on-line map depicts wetlands in the same locations as those depicted in the USFWS (2011) NWI.

### 3.1.3 Soil Conservation Service Maps

Background information regarding the soils of the study area was unavailable, as the Soil Survey of the King County Area (Snyder et al. 1973, Poulson and Miller 1952) and the U.S.D.A. Natural Resources Conservation Service (2011) On-line Web Soil Survey does not map units within the City of Seattle or in the urbanized vicinity.

### 3.1.4 WDNR Forest Practice Base Map

The WDNR (2011) Forest Practice Activity Map for the study depicts one stream within the eastern portion of the study area, east of Meyers Way South (Figure 5). The on-site portion of the mapped stream is depicted as non-fish-bearing (map symbol N) in its westernmost mapped extent and is depicted as fish-bearing (map symbol F) as it nears SR 509. The stream is depicted as meandering in an easterly direction on the east side of SR 509.

The water type classifications currently in use for the WDNR Forest Practice Base Map are described in the forest practices rules WAC 222-16 (See section 031) (Washington State Forest Practices Board 2008). The current WDNR definitions are provided in Table 1.

### 3.2 DELINEATED WETLANDS

Raedeke Associated, Inc. staff identified four wetlands within the MWR property and an additional three wetlands that are located within 200 feet of the property (Figures 6 and 7). Data forms for identified wetlands and upland areas investigated during our May 2011 site visits are found in Appendix A and a summary of sample plot data is found in Table 3. Completed rating

forms per the Washington Department of Ecology (WDOE) Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008) are provided in Appendix B.

#### 3.2.1 Wetland 1

Wetland 1 is located in the north portion of the property, near the intersection of the entrance to the City of Seattle JTF and Meyers Way South (Figure 6, Photo 5). The wetland is situated on a slight slope that drains north to a man-hole drain located just south of the JTF entrance. The wetland extends off-site to the east into the Meyers Way South right-of-way where it abuts the road shoulder. The area of the on-site portion of the wetland totals approximately 2,058 square feet. The total area of the wetland, including the off-site portion, appears to approximately 0.25 acres.

Wetland 1 receives water from seeps and sheet flow from Meyers Way South and surrounding uplands. The wetland flows south to north to a storm drain which conveys water beneath Meyers Way South and into Durham Creek located north of the Meyers Way Remainder Property (Herrara Environmental Consultants, Inc. 2008).

#### Vegetation

Wetland 1 consists of a forested vegetation community dominated by red alder (*Alnus Rubra*, FAC) and black cottonwood (*Populus balsamifera*, FAC) (Sample Plots SP1-2 and SP1-3). The shrub and herb layers were relatively sparse, dominated by red alder saplings, reed canarygrass (*Phalaris arundinacea*, FACW), and Kentucky bluegrass (*Poa pratensis*, FAC). Other species present within Wetland 1 included Himalayan blackberry (*Rubus armeniacus*, FACU), California blackberry (*Rubus ursinus*, FACU), field horsetail (*Equisetum arvense*, FAC), common rush (*Juncus effusus*; FACW), bird's-foot trefoil (*Lotus corniculatus*, FAC), colonial bentgrass (*Agrostis capillaris*, FACW). Greater than 50% of the dominant species within the delineated portion of the wetland are hydrophytic; thus, the delineated area meets the hydrophytic vegetation criteria of the COE Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010).

#### Soils and Hydrology

Soils within the on-site portion of the wetland consist of 6 to 8 inches of dark gray (10YR 4/1) gravelly sandy loam over dark gray (N 4/1) loamy sand (Sample Plots SP1-2 and SP1-3). This satisfies the requirements for Hydric Soil Indicator F3 (depleted matrix) of the Regional Supplement (COE 2010).

At the time of our May 2011 site investigation, the wetland was saturated starting at 4 to 6 inches below the surface with several small areas where water was flowing across the surface from seeps (Sample Plots SP1-2 and SP1-3). A small, ponded area approximately 300 square feet in size was located near the outlet of the wetland. In areas where soils were saturated, the zone of saturation extended down to a water table that was present at a depth of 9 to 10 inches below the

surface. Soil saturation and groundwater within 12 inches of the surface and areas of inundation meet criteria for wetland hydrology (Environmental Laboratory 1987, COE 2010).

### Adjacent Uplands

The vegetation within the uplands adjacent to the wetland boundary (red alder, Himalayan blackberry, common rush, and Kentucky bluegrass) met criteria to be considered hydrophytic, and soils either clearly met criteria to be considered hydric or were marginally non-hydric (Sample Plot, SP1-1 and SP1-4). Therefore uplands were differentiated from wetlands primarily by the absence of indicators of wetland hydrology. In both upland sample plots adjacent to the wetland, indicators of surface water were absent and soils were not saturated within a depth of 17 inches from the surface.

# Wetland Determination and Classification

Based on our observations, positive indicators for each of the three wetland parameters were present at the time of our site investigation; therefore, the area delineated as Wetland 1 meets the necessary criteria for designation as a wetland according to the guidelines of the COE (Environmental Laboratory 1987) wetland delineation manual as updated by the regional supplement (COE 2010).

Wetland 1 consists of a palustrine, forested (PFO) vegetation class according to the USFWS wetland classification system (Cowardin et al. 1992).

# Wetland Rating

For regulatory purposes, the City of Seattle (2011) code requires wetlands be rated using the Washington Department of Ecology's (WDOE) Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). Wetland 1 meets Category III wetland criteria. The wetland scored a total of 35 points (with 19 points for habitat functions). The completed WDOE wetland rating form is provided in Appendix B.

# 3.2.2 Wetland 2

Wetland 2 is located in the south portion of the property, beginning just south of the Seattle City Light power line right-of-way and extending up a moderate slope towards the south property boundary (Figure 6, Photo 6). The wetland drains to a man-made drainage swale that routes water to an infiltration pit. The wetland is contained entirely within the Meyers Way South Remainder property and is approximately 36,851 square feet in area.

Wetland 2 receives water from seeps and sheet flow from surrounding uplands. The wetland flows northeasterly to stormwater facilities beneath the Seattle City Light porwer line corridor. The stormwater facilities do not have an outlet and all flow from Wetland 2 is infiltrated.

### Vegetation

Wetland 2 includes areas of forested and scrub-shrub vegetation communities dominated by black cottonwood, Scouler's willow (*Salix scouleriana*, FAC), Sitka willow (*Salix sitchensis*,

FACW), Himalayan blackberry, colonial bentgrass, moss (*Musci spp.*, NI), velvetgrass (*Holcus lanatus*, FAC), field horsetail, creeping buttercup, and reed canarygrass (Sample Plot SP2-1 and SP2-3). Greater than 50% of the dominant species within the delineated portion of the wetland are hydrophytic; thus, the delineated area meets the hydrophytic vegetation criteria of the COE Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010).

# Soils and Hydrology

Soils within the wetland consist of 6 to 8 inches of black (10YR 2/1) to very dark gray brown (2.5Y 3/2) loam over dark gray brown (10YR 4/2) gravely sandy loam to gray (2.5Y 5/1) fine sandy loam (Sample Plot SP2-1 and SP2-3). Approximately 10% redoximorphic concentrations were present below 6 to 8 inches in the soil profiles. An odor of hydrogen sulfide also was present within soils at Sample Plot SP2-3. These satisfy the requirements for Hydric Soil Indicators F3 and A4 (depleted matrix) of the Regional Supplement (COE 2010).

At the time of our May 2011 site investigation, soils in a majority of the wetland were saturated within 6 inches of the surface and saturation extended down to a water table at a depth of 8 inches (Sample Plot (SP2-1). In several small depressions situated on the slope, soils were saturated to the surface or the depression was inundated to a depth of up to 2 inches (Sample Plot SP2-3). Soil saturation and groundwater within 12 inches of the surface and areas of inundation meet criteria for wetland hydrology (Environmental Laboratory 1987, COE 2010).

# Adjacent Uplands

The vegetation within the uplands adjacent to the wetland boundary was dominated by a mix of hydrophityc and non-hydrophytic species including red alder, Himalayan blackberry, Scouler's willow, Douglas fir (*Pseudotsuga menziesii*, FACU), sword fern (*Polystichum munitum*, FACU), Robert geranium (*Geranium robertianum*, UPL), and common tansy (*Tanacetum vulgare*, NI) and did not meet criteria to be considered a hydrophytic vegetation community (Sample Plots SP2-2 and SP2-4). Soils varied from areas that exhibited hydric characteristics such as low matrix chroma with redoximorphic features below a depth of 4 inches (Sample PlotSP2-4) to areas where soils were bright and the hydric soils criteria clearly were not met (Sample Plot SP2-2). The upland areas were most clearly differentiated from wetlands by the absence of indicators of wetland hydrology (Sample Plots SP2-2 and SP2-4). Areas that lacked hydrology were determined to be uplands.

### Wetland Determination and Classification

Based on our observations, positive indicators for each of the three wetland parameters were present at the time of our site investigation; therefore, the area delineated as Wetland 2 meets the necessary criteria for designation as a wetland according to the guidelines of the COE (Environmental Laboratory 1987) wetland delineation manual as updated by the regional supplement (COE 2010).

Wetland 2 consists of palustrine, forested (PFO) and palustrine, scrub-shrub vegetation classes according to the USFWS wetland classification system (Cowardin et al. 1992).

#### Wetland Rating

Wetland 2 meets Category III wetland criteria. The wetland scored a total of 30 points (with 16 points for habitat functions) on the WDOE Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). The completed WDOE wetland rating form is provided in Appendix B.

# 3.2.3 Wetland 3

Wetland 3 is located in the north portion of the portion of the property east of Meyers Way South (Figure 6, Photo 7). The wetland is on a steep, forested slope that extends down from Meyers Way South to the SR-509 right-of-way. The wetland receives water from seeps and also from a 30-inch pipe near the base of the slope (Goldsmith and Associates, Inc. 2011). Water discharged from the pipe flows eastward within a stream channel (Stream 3) through the wetland to a manhole within the SR-509 right-of-way (Goldsmith and Associates, Inc. 2011). Previous watershed analysis by WDOE (2007), AMEC (2007), and The Watershed Company (2003) indicate that Stream 3 may constitute the day-lighted headwaters of the North Fork of Hamm Creek. Upon entering the manhole at SR 509, Stream 3 drops down approximately 20 feet to allow it to be conveyed to the east side of SR-509 (Goldsmith and Associates, Inc. 2011, WDOE 2007). The area of the on-site portion of the wetland is approximately 65,762 square feet. The entire wetland area including the off-site area appears to be less than 2 acres.

### Vegetation

Wetland 3 consists of a forested vegetation community dominated by red alder and western red cedar (*Thuja plicata*, FAC) (Sample Plot SP3-1). The shrub and herb layers are dominated by salmonberry (*Rubus spectablis*, FAC), common ladyfern (*Athyrium filix-femina*, FAC), and climbing nightshade (*Solanum dulcamara*, FAC). Greater than 50% of the dominant species within the delineated portion of the wetland are hydrophytic; thus, the delineated area meets the hydrophytic vegetation criteria of the COE Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010).

### Soils and Hydrology

Soils within the on-site portion of the wetland consist of 8 inches of very dark brown (10YR 2/2) loam over dark gray (10YR 4/1) fine sandy loam (Sample Plot SP3-1). This satisfies the requirements for Hydric Soil Indicator F3 (depleted matrix) of the Regional Supplement (COE 2010).

At the time of our May 2011 site investigation, soils within the wetland were saturated to the surface and a groundwater table also was at the surface. We observed numerous areas where water was flowing across the surface from seeps (Sample Plot SP3-1). Water was also flowing within Stream 3 at a rate of greater than approximately 5 cubic feet per second (cfs). Soil saturation and groundwater within 12 inches of the surface and areas of inundation meet criteria for wetland hydrology (Environmental Laboratory 1987, COE 2010).

#### Adjacent Uplands

The vegetation within the uplands adjacent to the wetland boundary was dominated by a mix of hydrophitic and non-hydrophitic species including red alder, western red cedar, Indian plum (*Oemlaria cerasiformis*, FACU), red elderberry (*Sambucus racemosa*, FACU), sword fern, and stinging nettle (*Urtica dioica*, FAC) and did not meet criteria to be considered a hydrophytic vegetation community (Sample Plot SP3-2). Soils in the adjacent uplands were bright and did not exhibit redoximorphic features and, therefore, were not hydric (Sample Plot SP3-2). We did not observe indicators of wetland hydrology within the adjacent uplands at the time of our May 2011 site investigation (Sample Plot SP3-2).

### Wetland Determination and Classification

Based on our observations, positive indicators for each of the three wetland parameters were present at the time of our site investigation; therefore, the area delineated as Wetland 3 meets the necessary criteria for designation as a wetland according to the guidelines of the COE (Environmental Laboratory 1987) wetland delineation manual as updated by the regional supplement (COE 2010).

Wetland 3 consists of a palustrine, forested (PFO) vegetation class according to the USFWS wetland classification system (Cowardin et al. 1992).

### Wetland Rating

Wetland 3 meets Category III wetland criteria. The wetland scored a total of 32 points (with 16 points for habitat functions) on the WDOE Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). The completed WDOE wetland rating form is provided in Appendix B.

### 3.2.4 Wetland 4

Wetland 4 is located in the south portion of the portion of the property east of Meyers Way South (Figure 6, Photo 8). The wetland is situated near the base of a steep, forested slope that extends down from Meyers Way South to the SR-509 right-of-way. The wetland extends off-site to the east into the SR-509 right-of-way where it drains to a storm drain manhole. We were not able to determine the location of the outfall of the pipe on the east side of SR-509 from either our background review of watershed analysis documents or our site investigation. The wetland receives water from seeps along the western boundary and a small stream (Stream 4) that originates at a seep approximately 50 feet west of the wetland near Meyers Way South (Figure 6). The wetland totals approximately 606 square feet. The total area of the wetland, including the off-site portion, appears to be less than 0.25 acres.

#### Vegetation

Wetland 4 consists of a forested vegetation community dominated by red alder a (Sample Plot SP4-1). The shrub and herb layers are dominated by salmonberry and skunk cabbage (*Lysichiton americanum*, OBL). Greater than 50% of the dominant species within the delineated portion of the wetland are hydrophytic; thus, the delineated area meets the hydrophytic vegetation criteria

of the COE Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010).

# Soils and Hydrology

Soils within the on-site portion of the wetland consist of 10 inches of black (10YR 2/1) loam over dark gray (10YR 4/1) sandy loam (Sample Plot SP4-1). This satisfies the requirements for Hydric Soil Indicator F3 (depleted matrix) of the Regional Supplement (COE 2010).

At the time of our May 2011 site investigation, soils within the wetland were saturated to the surface and a groundwater table also was at the surface. Wetland hydrology is fed by several seeps. Soil saturation and groundwater within 12 inches of the surface meet criteria for wetland hydrology (Environmental Laboratory 1987, COE 2010).

# Adjacent Uplands

The vegetation within the uplands adjacent to the wetland boundary was dominated by a mix of hydrophitic and non-hydrophitic species including red alder, bigleaf maple (*Acer macrophyllum*, FACU), Indian plum, salmonberry, sword fern, and stinging nettle and did not meet criteria to be considered a hydrophytic vegetation community (Sample Plot SP4-2). Soils in the adjacent uplands were bright and did not exhibit redoximorphic features and, therefore, determined to be non-hydric (Sample Plot SP4-2). We did not observe indicators of wetland hydrology within the adjacent uplands at the time of our May 2011 site investigation (Sample Plot SP4-2).

### Wetland Determination and Classification

Based on our observations, positive indicators for each of the three wetland parameters were present at the time of our site investigation; therefore, the area delineated as Wetland 4 meets the necessary criteria for designation as a wetland according to the guidelines of the COE (Environmental Laboratory 1987) wetland delineation manual as updated by the regional supplement (COE 2010).

Wetland 4 consists of a palustrine, forested (PFO) vegetation class according to the USFWS wetland classification system (Cowardin et al. 1992).

# Wetland Rating

Wetland 4 meets Category III wetland criteria. The wetland scored a total of 32 points (with 16 points for habitat functions) on the WDOE Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). The completed WDOE wetland rating form is provided in Appendix B.

# 3.2.5 Wetland 5 / Drainage Ditch

Wetland 5 is located within an excavated drainage ditch in the northern portion of the property (Figure 5, Photo 9). The drainage ditch was constructed as part of a site drainage facility to convey stormwater out of the property (City of Seattle 1986, WDOE 2007). The majority of the stormwater facility was dry at the time of our site investigation and did not meet criteria to be

delineated as wetland; however, groundwater seeps into the ditch just north of a culverted road crossing at the approximate mid-point of the ditch length. The portion of the ditch that conveys groundwater was delineated because it may be regulated by the COE as a "water of the U.S." However, the delineated portion of the stormwater ditch may be exempted from regulation as wetland by the City of Seattle under Section 25.09.020.C. of the City of Seattle (2011a) municipal code which exempts constructed stormwater ditches. Wetland 5 drains to a storm drain manhole that conveys water to the east side of Meyers Way and into Durham Creek (Herrera Environmental Consultants, Inc. 2008). The wetland is entirely on-site and confined to the bottom portion of the ditch. The wetland totals approximately 4,128 square feet in area.

### Vegetation

Wetland 5 consists primarily of a scrub-shrub vegetation community with an approximately 1,500 square-foot area dominated by emergent species located near the ditch terminus at the north end. The scrub-shrub community is dominated by Sitka willow, Himalayan blackberry, filed horsetail, watercress (*Nasturtium officinale*, OBL), and panicled bulrush (*Scirpus microcarpus*, OBL) (Sample Plot SP5-1). The emergent area at the north end of the ditch is dominated by nearly monotypic watercress. All of the dominant species within the delineated portion of the wetland are hydrophytic; thus, the delineated area meets the hydrophytic vegetation criteria of the COE Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010).

# Soils and Hydrology

Soils within the on-site portion of the wetland consist of 6 inches of very dark brown (10YR 2/2) sandy loam over dark gray (5Y 4/1) loamy sand (Sample Plot SP5-1). This satisfies the requirements for Hydric Soil Indicator F3 (depleted matrix) of the Regional Supplement (COE 2010).

At the time of our May 2011 site investigation, the edges of the wetland were saturated to the surface with a water table present at 2 inches. The bottom of the ditch was flowing at a rate of approximately 2 cfs (Sample Plot SP5-1). A small, ponded area approximately 200 square feet in size was located near the outlet of the wetland at the north terminus of the ditch. Soil saturation and groundwater within 12 inches of the surface and areas of inundation meet criteria for wetland hydrology (Environmental Laboratory 1987, COE 2010).

# Adjacent Uplands

Uplands were defined by the topographic change between the adjacent upland and the 4- to 6foot-deep ditch that contained Wetland 5. Vegetation within the uplands adjacent to the wetland boundary was dominated by facultative species, primarily non-native grasses. Patches of facultative upland invasive shrubs were also present within the upland. The area adjacent to the ditch was dominated by Himalayan blackberry, Scotch broom (*Cytisus scoparius*, UPL), black cottonwood saplings, colonial bentgrass, and quackgrass (*Elymus repens*, FAC) (Sample Plot UPL-15). Soils were very compacted below six inches. Aerial photos of the site reviewed prior to our investigation indicated that much of the area in the vicinity of Wetland 5 had been used for equipment parking or used as an access to the northwest portion of the property (Figure 5). Water was ponded to a depth of an inch within several tire ruts in the adjacent uplands (Sample Plot UPL-15); however, it was our best professional judgement that this did not indicate wetland hydrology criteria because the surface water was not linked to groundwater and was likely to be the result of recent and higher than normal rainfall during the previous month.

# Wetland Determination and Classification

Based on our observations, positive indicators for each of the three wetland parameters were present at the time of our site investigation; therefore, the area delineated as Wetland 5 meets the necessary criteria for designation as a wetland according to the guidelines of the COE (Environmental Laboratory 1987) wetland delineation manual as updated by the regional supplement (COE 2010).

Wetland 5 consists of palustrine, scrub-shrub (PSS) and palustrine, emergent (PEM) vegetation classes according to the USFWS wetland classification system (Cowardin et al. 1992).

# Wetland Rating

Wetland 5 meets Category IV wetland criteria. The wetland scored a total of 23 points (with 19 points for habitat functions) on the WDOE Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). The completed WDOE wetland rating form is provided in Appendix B.

### **3.3 OFF-SITE WETLANDS**

We reviewed recent aerial photos (Google Maps 2011, Microsoft Bing Maps 2011) of the project site and vicinity in conjunction with the background resource inventory maps (City of Seattle DPD GIS on-line maps, U.S. Fish and Wildlife Service National Wetland Inventory (USFWS NWI 2011) to determine whether off-site wetlands were located within 200 feet of the project site. In addition, we walked roads and other public access areas in the vicinity of property to verify the presence of any off-site wetland areas that had been identified during our background review and to determine whether other wetland areas were present that may not have been identified by the resource inventory maps and aerial photos. We observed three off-site wetlands within 200 feet of the MWR property.

Off-site Wetland 1 is located within the western portion of the JTF property at the base of the former gravel pit wall (Figure 7). Off-site Wetland 1 is fed by seeps and drains to a grated pipe at the north end of the wetland. The wetland is within two parallel trenches that appear to be part of the mine drainage facilities. Quarry spalls separate the eastern trench into three separate cells. The wetland consists of a forested vegetation class dominated by red alder, western red cedar, and salmonberry. Off-site Wetland 1 meets Category II wetland criteria. The wetland scored a total of 51 points (with 19 points for habitat functions) on the WDOE Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). The completed WDOE wetland rating form is provided in Appendix B.

Off-site Wetland 2 is a shallow stormwater detention pond located in the eastern portion of the JTF property, approximately 100 feet north of the MWR property (WDOE 2007) (Figure 7). Off-site Wetland 2 was previously classified as wetland by the U.S. Army Corps of Engineers

(WDOE 2007). Off-site Wetland 2 was expanded as part of the wetland mitigation for the JTF project (WDOE 2007). The wetland consists of emergent and aquatic bed vegetation communities dominated by broadleaf cattail (*Typha latifolia*, OBL), hardstem bulrush (*Schoenoplectus acutus*, OBL), and an unidentified aquatic species. Hydrology to Off-site Wetland 2 is provided by groundwater and surface water runoff from paved areas and roof tops (WDOE 2007). Off-site Wetland 2 meets Category III wetland criteria. The wetland scored a total of 40 points (with 10 points for habitat functions) on the WDOE Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). The completed WDOE wetland rating form is provided in Appendix B.

Off-site Wetland 3 is located in the vicinity of the eastern boundary of the JTF property within a swale adjacent to Meyers Way South, approximately 100 feet from the MWR property (Figure 7). The wetland consists of emergent and scrub-shrub vegetation classes and appears to have been planted with native shrub and emergent species within the past 5 years. The wetland is dominated by broadleaf cattail, Pacific willow (*Salix lucida*, FACW), and Sitka willow. Hydrology to Off-site Wetland 3 is provided by overflow from Off-site Wetland 2 (WDOE 2007). Off-site Wetland 3 meets Category II wetland criteria. The wetland scored a total of 51 points (with 13 points for habitat functions) on the WDOE Wetland Rating System for Western Washington (Hruby 2004, as revised 2006, and WDOE 2008). The completed WDOE wetland rating form is provided in Appendix B.

#### 3.4 STREAMS

Five streams were identified within the MWR property. For regulatory purposes, the City of Seattle (2011) code regulates streams as Riparian Corridors, which are the riparian watercourse and the riparian management area. The riparian watercourse is the watercourse of Type 2-5 waters defined in WAC 222-16-031 that have fish or wildlife habitat. A summary of stream type definitions per WAC 222-16-031 are provided in Table 2. A conversion table for the Washington State Forest Practices Board (2008) water typing system currently used by the WDNR and the stream type definitions required under City of Seattle (2011a) code is provided in Table 3.

Stream 1 and Stream 2 are located within scoured channels adjacent to an access road in the southern portion of the site. Both streams are seasonal and appear to be ditches that convey storm run-off to stormwater facilities in the Seattle City Light Powerline Corridor where their discharge is infiltrated. Neither stream was flowing at the time of our May 2011 site investigation and neither are connected to other wetlands or streams; therefore, neither Stream 1 or Stream 2 would be typed streams per City of Seattle (2011a) stream definitions.

Stream 3 flows within Wetland 3 and is described above in Section 3.2.3. Stream 3 was flowing at a rate of approximately 5 cfs at the time of our May 2011 site investigation. Given the observed rate of flow and ground water source, it is likely that the stream flows year-round. Stream 3 meets the Type 4 stream definition per City of Seattle (2011a) stream definitions because it does not appear to be accessible to fish due to a fish-impassible culvert beneath SR 509.

Stream 4 is within Wetland 4 and is described above in Section 3.2.4. Stream 4 was flowing at a rate of approximately 1 cubic feet per second (cfs) at the time of our May 2011 site investigation. Given the observed rate of flow and groundwater source, it is likely that the stream flows year-round. Stream 4 meets the Type 4 stream definition per City of Seattle (2011) stream definitions because it does not appear to be accessible to fish due to a fish-impassible culvert beneath SR 509.

Stream 5 is within the drainage ditch encompassed by Wetland 5. Stream 5 flows from a seep in the bottom of the drainage ditch to a manhole at the northern terminus of the wetland. The drainage ditch is part of the mine stormwater facilities constructed to convey water out of the sand and gravel mine (Herrera Environmental Consultants 2008, WDOE 2007). Stream 5 was flowing at a rate of approximately 3 cfs at the time of our May 2011 site investigation. Given the observed rate of flow and ground water source, it is likely that the stream flows year-round. Stream 5 meets the Type 4 stream definition per WAC 222-16-031 because it does not appear to be accessible to fish due to a fish-impassible culvert beneath Meyers Way South.

# 3.5 GENERAL UPLANDS

The portion of the MWR Property located west of Meyers Way South was mined for sand and gravel for decades. Mining activities ended in 2001 and a limited area adjacent to the City of Seattle JTF site was re-graded in 2005. As a result of previous mining, soils within a majority of the property on the west side of Meyers Way South have been disturbed. We also found soils throughout most of the site to consist of low chroma sandy loams and loamy sands that were highly mixed within the upper 12 to 15 inches of the soil profile. The low chroma of most of the surface soils within the site is probably a reflection of their origin from deep below the original ground surface where anaerobic, reducing soil conditions existed. We also found vegetation throughout most of the site to be dominated by invasive, facultative species that are adapted to disturbance and are found with nearly equal frequency in either uplands or wetlands. As a result, in most areas that had been mined, neither the dominant vegetation community or soils provided a clear indication of whether an area was wetland or upland.

Therefore, our determination of whether an area met criteria to be considered jurisdictional wetland was weighted heavily with regard to the presence of indicators of wetland hydrology. Due to the unseasonably wet weather prior to our investigation described above in Section 1.4, we observed numerous areas throughout the site where small depressions or tire ruts contained up to an inch of surface water. In other areas, soils were saturated within a two- to three-inch-deep zone at the surface. However, in both of these circumstances, we found that the soils below the shallow inundation or zones of saturation to be relatively dry. Therefore the criterion used to determine the presence of wetland hydrology required that areas of inundation or surface saturation must be linked by a continuous zone of soil saturation to a groundwater table. None of the upland areas met this criterion. Sample plots that were determined to be upland based on this criterion included UPL-7, UPL-8, UPL-9, UPL-10, UPL-11, UPL-15, UPL-16, and UPL-18.

We also determined that several of the on-site stormwater facilities did not meet criteria to be considered wetland based on an absence of evidence that these areas were either inundated or saturated to the surface for more than 5% (approximately 12 consecutive days) during the

growing season, as is required by the COE (Environmental Laboratory 1987) wetland delineation manual. These included an area located southwest of Wetland 5 (Figure 6) that is identified as wetland on the USFWS (2011) NWI and the City of Seattle Critical Areas Inventory (2011b). In this area we found that the surface was dry and there were no evidence such as drift lines, water stained vegetation, sediment deposits, or algal mats to indicate that surface water had been present earlier in the growing season (Sample Plot UPL-5, Figure 6). We found that soils were saturated beginning at a depth of 15 inches below the surface and that a groundwater table was present at a depth of 17 inches. The depth to soil saturation and groundwater table corresponded to the depth of a dark gray (5Y 4/1) loamy sand layer. We found that this sandy loam layer is located at the ground surface approximately 200 feet to the north and downslope from this area and was the source of the surface water within the ditch that contained Wetland 5.

Other areas where stormwater facilities were determined not to meet wetland criteria included areas in the vicinity of Sample Plots UPL-15 and UPL-20 (Figure 6). In both of these areas, we found evidence such as drift lines, water stained vegetation, and sediment deposits, to indicated that water likely had been present earlier in the year; however, at the time of our site investigation we did not find groundwater or soil saturation within greater than 20 inches of the surface, and it appeared that water that had been present within the facilities had infiltrated within the very coarse, sandy soils found in the bottoms of the facilities. Given the above normal rainfall prior to our site investigation and the observed shallow puddles in many other upland areas throughout the site caused by the recent rain, we determined that it was very unlikely that the stormwater facilities would be inundated or saturated to the surface for greater than 5% of the growing season.

#### 4.0 REGULATORY CONSIDERATIONS

Wetlands and streams are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances including the City of Seattle (2011a) municipal code. Regulatory considerations pertinent to wetlands identified within the study area are discussed below; however, this discussion should not be considered comprehensive. Additional information may be obtained from agencies with jurisdictional responsibility for, or interest in, the site. A brief review of the U.S. Army Corps of Engineers regulations and City of Seattle policy, relative to wetlands and streams, is presented below.

# 4.1 FEDERAL CLEAN WATER ACT (COE AND WDOE)

Federal law (Sections 404 and 401 of the Clean Water Act) discourages the discharge of dredged or fill material into the nation's waters, including most wetlands and streams, without a permit from the U.S. Army Corps of Engineers (COE) and, in most cases, certification by the WDOE in the State of Washington.

We note that certain wetlands, including many that are hydrologically isolated from "Waters of the U.S.," may not be regulated by the COE. As a result of the 2006 Supreme Court *Rapanos* decision, the COE and the U.S. Environmental Protection Agency (U.S. EPA) have updated guidance regarding wetlands that are regulated under federal law including Sections 404 and 401 of the Clean Water Act. Regulated wetlands now include those that are adjacent to traditionally navigable waters, those that abut relatively permanent tributaries of traditionally navigable waters, and those that are considered to have a "significant nexus" with a traditional navigable water (U.S. EPA 2008). Agency determination of what constitutes a significant nexus is complex and includes consideration of hydrologic and ecologic factors (U.S. EPA 2008). These include flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters" (U.S. EPA 2008).

The COE makes the final determination as to whether an area meets the definition of "Waters of the U.S." as defined by the federal government (Federal Register 1986:41251), and thus, if it is under their jurisdiction. We should caution that the placement of fill within wetlands or other "Waters of the U.S." without authorization from the COE is not advised, as the COE makes the final determination regarding whether any permits would be required for any proposed alteration (COE 2007). Therefore, we recommend requesting a jurisdictional determination from the COE prior to any construction activities, if any modification of wetlands is proposed. A jurisdictional determination would also provide evaluation and confirmation of our wetland delineation by the COE.

### 4.2 CITY OF SEATTLE

### 4.2.1 Wetland and Stream Regulations

The City of Seattle (2011a) regulates wetlands and streams as critical areas. Alterations of wetlands or streams and their buffers are generally prohibited, except as allowed under certain conditions. All direct wetland impacts must be mitigated through wetland creation and restoration, or through wetland enhancement. The City of Seattle has the final authority to

determine ratings, buffers, and allowed uses of wetlands and other critical areas that are under their jurisdiction. Tables 5 and 6 summarize the likely regulatory status and buffers that may be required per City of Seattle (2011a) municipal code for each wetland and stream identified within the study area.

The City of Seattle (2011a) determines wetland buffer widths based on wetland category, as determined by the WDOE (Hruby 2004, as revised 2006, and WDOE 2008) wetland rating system. Wetland buffer widths are measured perpendicular from the wetland boundary as surveyed in the field. In instances where wetland and stream buffers overlap, the widest (most restrictive) of the two buffers is usually applied. In general, the City of Seattle (2011a) provides the widest buffers for high quality wetlands and those wetlands that provide high wildlife habitat function. The widest buffers (200 feet) are provided for Category I and Category II wetlands that provide a high level of habitat function. Conversely, the City of Seattle (2011a) does not require a buffer for Category IV wetlands that are less than 1,000 square feet in area and do not abut other wetlands and are not connected to Type 1-5 waters.

The City of Seattle (2011a) regulates streams as "Riparian Corridors", which are the riparian watercourse and its riparian management area. The riparian management area is the area within 100 feet measured horizontally landward from the top of each bank of the watercourse, or from the ordinary high water mark of the watercourse as surveyed in the field, if the top of the bank cannot be determined. In general, development or removal of vegetation within the riparian management area is prohibited, except in limited circumstances.

# 4.2.2 Regulatory Jurisdiction for Wetlands and Streams Within the Study Area

Wetlands 1, 2, 3, 4, and Off-site Wetlands 1, 2, and 3 are likely to be regulated as wetlands under SMC 25.09. Wetland 5 may be exempt from regulation under SMC 25.09.020.C because it was constructed as a stormwater facility for the property.

Streams 3, 4, and 5 meet criteria to be considered Type 4 streams and are likely to be regulated as streams under SMC 25.09. Streams 1 and 2 may be exempt from regulation under SMC 25.09.020.D.5 because they do not meet criteria to be considered Type 2-5 streams.

We should caution that wetlands and streams that are not regulated by the City of Seattle may be regulated by the COE, WDOE, or other regulatory agencies.

# 4.2.3 Buffers for Wetlands Within the Study Area

Wetlands 1, 2, 3, and 4 and Off-site Wetland 2 meet Category III wetland criteria based on the Washington State Wetland Rating System for Western Washington, (Hruby 2004; as revised 2006, and WDOE 2008). In addition, each of these wetlands scored less than 20 habitat points on the WDOE rating form and would be considered to provide relatively low habitat function. Under City of Seattle (2011a) code, Category III wetlands that score less than 20 points for habitat function are provided a 60-foot native vegetation buffer.

Off-site Wetlands 1 and 3 meet Category II wetland criteria based on the Washington State Wetland Rating System for Western Washington, (Hruby 2004; as revised 2006, and WDOE

2008). In addition, both of these wetlands scored less than 20 habitat points on the WDOE rating form and would be considered to provide relatively low habitat function. Under City of Seattle (2011a) code, Category II wetlands that score less than 20 points for habitat function are provided a 100-foot native vegetation buffer.

#### 5.0 LIMITATIONS

We have prepared this report for the exclusive use the City of Seattle and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from the City of Seattle.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

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## FIGURES AND TABLES



9510 Stone Avenue North Seattle, WA 98103

# Google maps



Figure 2. Vicinity map showing approximate boundaries of project site.





Figure 3. US Fish and Wildlife Service National Wetlands Inventory Map showing approximate boundaries of project site and surroundings.

# Wetlands






Wetlands Riparian Corridors

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Figure 4: City of Seattle (2011) Department of Planning and Development GIS Map showing wetlands and riparian areas for the Meyers Way Remainder Property.





Figure 5: Washington Dept. of Natural Resources (2011) Forest Practice Activity Map for Project Site.



9510 Stone Avenue North Seattle, WA 98103





9510 Stone Avenue North Seattle, WA 98103

Table 1. Summary of definitions of water types found on Washington Department of Natural<br/>Resources Forest Practice Base Maps (See Washington State Forest Practices Board<br/>[2008] for complete definitions).

- (1) "Type S Water" means all waters, within their bankfull width, as inventoried as "shorelines of the state" under chapter 90.58 RCW and the rules promulgated pursuant to chapter 90.58 RCW including periodically inundated areas of their associated wetlands.
- (2) "Type F Water" means segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:
  - (a) Waters, which are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F Water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;
  - (b) Waters, which are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F Water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality. The department may allow additional harvest beyond the requirements of Type F Water designation provided the department determines after a landowner-requested on-site assessment by the department of fish and wildlife, department of ecology, the affected tribes and interested parties that:
    - (i) The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and
    - (ii) Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;
  - (c) Waters, which are within a federal, state, local, or private campground having more than 10 camping units: Provided, That the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;

## Type Definition

- (d) Riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat. These areas are critical to the maintenance of optimum survival of fish. This habitat shall be identified based on the following criteria:(i) The site must be connected to a fish habitat stream and accessible during some period of the year; and
  - (ii) The off-channel water must be accessible to fish.
- (3) **"Type Np Water"** means all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are waters that do not go dry any time of a year of normal rainfall. However, for the purpose of water typing, Type Np Waters include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. If the uppermost point of perennial flow cannot be identified with simple, nontechnical observations (see board manual, section 23), then Type Np Waters begin at a point along the channel where the contributing basin area is:
  - (a) At least 13 acres in the Western Washington coastal zone (which corresponds to the Sitka spruce zone defined in Franklin and Dyrness, 1973);
  - (b) At least 52 acres in other locations in Western Washington;
  - (c) At least 300 acres in Eastern Washington.
- (4) "Type Ns Water" means all segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.
- (5) For purposes of this section:
  - (a) "Residential unit" means a home, apartment, residential condominium unit or mobile home, serving as the principal place of residence.
  - (b) "Camping unit" means an area intended and used for:
    - (i) Overnight camping or picnicking by the public containing at least a fireplace, picnic table and access to water and sanitary facilities; or
    - (ii) A permanent home or condominium unit or mobile home not qualifying as a "residential unit" because of part time occupancy.

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## Table 1. Continued

- (c) "Public accommodation facility" means a business establishment open to and licensed to serve the public, such as a restaurant, tavern, motel or hotel.
- (d) "Natural waters" only excludes water conveyance systems which are artificially constructed and actively maintained for irrigation.
- (e) "Seasonal low flow" and "seasonal low water" mean the conditions of the 7-day, 2-year low water situation, as measured or estimated by accepted hydrologic techniques recognized by the department.
- (f) "Channel width and gradient" means a measurement over a representative section of at least 500 linear feet with at least 10 evenly spaced measurement points along the normal stream channel but excluding unusually wide areas of negligible gradient such as marshy or swampy areas, beaver ponds and impoundments. Channel gradient may be determined utilizing stream profiles plotted from United States geological survey topographic maps (see board manual section 23).
- (g) "Intermittent streams" means those segments of streams that normally go dry.
- (h) "Fish habitat" means habitat which is used by any fish at any life stage at any time of the year, including potential habitat likely to be used by fish which could be recovered by restoration or management and includes off-channel habitat.

# Table 2. Summary of stream definitions used by the City of Seattle to regulate Fish and WildlifeHabitat Conservation Areas. These are based on WAC 222-16-031.

- 1 All waters, within their ordinary high-water mark, as inventoried as "shorelines of the state" under chapter 90.58 RCW.
- 2 All segments of natural waters and periodically inundated areas of their associated wetlands, which are not classified as Type 1 Water and have a high fish, wildlife, or human use, including use for or by:
  - (a) Domestic water supplies (>100 units), including 1,500 ft. upstream;
  - (b) Fish hatcheries, including 1,500 ft. upstream if significant for water quality;
  - (c) Campgrounds (>30 units);
  - (d) Substantial numbers of fish for spawning, rearing, or migration or wildlife;
    - (i) Stream segments having a defined channel 20 feet or greater within the bankfull width and having a gradient of less than 4 percent.
    - (ii) Lakes, ponds, or impoundments having a surface area of 1 acre or greater at seasonal low water.
  - (e) Salmonids for off-channel habitat,
    - (i) site must be connected to a stream bearing salmonids and accessible during some period of the year; and
    - (ii) off-channel water must be accessible to juvenile salmonids through a drainage with less than 5 percent gradient.
- 3 All segments of natural waters and periodically inundated areas of their associated wetlands which are not classified as Type 1 or 2 and have a moderate to slight fish, wildlife, or human use, including use for or by:
  - (a) Domestic water supplies (>10 units), including 1,500 ft. upstream;
  - (b) Significant numbers of fish for spawning, rearing, or migration.
    - If fish use has not been determined:
    - (i) Waters having following characteristics are presumed to have fish use:
      - (A) stream segments having a defined channel of ≥2 ft. within bankfull width in W. Wash. (≥3 ft in E. Wash.); and having a gradient of 16 percent or less;
      - (B) stream segments having a defined channel ≥2 ft. within bankfull width in W. Wash. (≥3 ft. in E. Wash.), with a gradient of >16-20 percent, and ≥50 ac. in contributing basin in W. Wash. (≥175 ac. in E. Wash.);

- (C) ponds or impoundments having < 1 ac. surface area at seasonal low water and having an outlet to a fish stream;
- (D) ponds or impoundments having > 0.5 ac. surface area at seasonal low water.
- (ii) Dept. shall waive or modify characteristics in (i) above where:
  - (A) water quality confirmed to be incapable of supporting such fish;
  - (B) flow cycle of stream is too short to support life history phases of such fish (i.e., snowmelt streams with no typical winter flow and dry by June 1); or
  - (C) sufficient information about geographic region is available to support departure from criteria in (i) as determined in consultation with WDFW, WDOE, affected tribes, and interested parties.
- 4 All segments of natural waters within bankfull width of defined channels that are not classified as Type 1, 2, or 3 Waters and which are perennial waters of nonfish-bearing streams. Perennial waters means waters downstream from a perennial initiation point.
- 5 All segments of natural waters within bankfull width of defined channels that are not Type 1, 2, 3 or 4 Waters and which are seasonal nonfish-bearing streams. "Seasonal streams" means those streams that are not perennial but are physically connected by a defined channel system to downstream waters so that water or sediment initially delivered to these waters may eventually be delivered to a Type 1, 2, 3 or 4 Water.

Permanent Water Typing	Interim Water Typing
Type "S"	Type 1 Water
Type "F"	Type 2 and 3 Water
Type "Np"	Type 4 Water
Type "Ns"	Type 5 Water

Table 3. WAC 222-16-31 Interim Water Typing System conversion table.

Sample Plot	Hydrophytic Vegetation Present	Hydric Soils Present	Wetland Hydrology Present	Meets Wetland Criteria
SP1-1	YES	YES	NO	NO
SP1-2	YES	YES	YES	YES
SP1-3	YES	YES	YES	YES
SP1-4	YES	NO	NO	NO
SP2-1	YES	YES	YES	YES
SP2-2	NO	NO	NO	NO
SP2-3	YES	YES	YES	YES
SP2-4	NO	YES	NO	NO
SP3-1	YES	YES	YES	YES
SP3-2	NO	NO	NO	NO
SP4-1	YES	YES	YES	YES
SP4-2	NO	NO	NO	NO
SP5-1	YES	YES	YES	YES
UPL-1	NO	NO	NO	NO
UPL-2	NO	NO	NO	NO
UPL-3	YES	YES	NO	NO
UPL-4	NO	NO	NO	NO
UPL-5	NO	YES	NO	NO
UPL-6	NO	YES	NO	NO
UPL-7	NO	NO	NO	NO
UPL-8	YES	NO	NO	NO
UPL-9	NO	NO	NO	NO
UPL-10	YES	YES	NO	NO
UPL-11	YES	YES	NO	NO
UPL-12	NO	NO	NO	NO
UPL-13	YES	YES	NO	NO
UPL-14	YES	NO	NO	NO
UPL-15	YES	NO	NO	NO
UPL-16	YES	NO	NO	NO
UPL-17	YES	NO	NO	NO
UPL-18	NO	NO	NO	NO
UPL-19	YES	NO	NO	NO
UPL-20	YES	NO	NO	NO

 Table 4.
 Summary of data collected at sample plots at the Seattle Meyers Way Remainder property.

Wetland	On-site Area (sf)	Cowardin Classification	HGM Classification	WDOE Rating (Total Score)	Habitat Function Score	Regulated by City of Seattle <sup>1</sup>	Buffer (ft)
1	2,058	PFO	Slope	III (34)	18	YES	60
2	36,851	PFO / PSS	Slope	III (31)	15	YES	60
3	65, 762	PFO	Slope	III (34)	18	YES	60
4	606	PFO	Slope	III (33)	17	YES	60
5	4,128	PEM / PSS	Riverine	IV (22)	18	NO	None
Off-site 1	10,000 <sup>2</sup>	PFO	Depressional	II (51)	19	YES	100
Off-site 2	10,000 <sup>2</sup>	PEM / PAB	Depressional	III (40)	10	YES	60
Off-site 3	20,000 <sup>2</sup>	PEM / PSS	Depressional	II (51)	13	YES	100

Table 5. Probable Wetland Ratings per revised WDOE (Hruby 2004, WDOE 2008) ratings form, corresponding City Seattle (2011)buffer standards, and likely regulatory jurisdiction.

Notes:

<sup>1</sup> The City of Seattle, WDOE, and COE have the final authority to determine whether a wetland or stream would be regulated under their jurisdiction.

<sup>2</sup> Area is approximate based on field measurements.

Stream	WDNR Water Type	Regulated by City of Seattle <sup>1</sup>	Riparian Management Zone (ft)
Stream 1	N/A <sup>1</sup>	NO	None
Stream 2	N/A <sup>1</sup>	NO	None
Stream 3	4	YES	100
Stream 4	4	YES	100

Table 6. Probable WDNR (2000) Water Type for on-site streams, corresponding City Seattle(2011) buffer standards, and likely regulatory jurisdiction.

Notes:

<sup>1</sup> The stream does not have characteristics of Type 1, 2, 3, or 4 waters and is not physically connected by a defined channel system to downstream waters so that water or sediment initially delivered to these waters may eventually be delivered to a Type 1, 2, 3 or 4 Water.



**Photo 1** Property overview. South portion of Parcel B. North-facing view.



**Photo 3** Property overview. East portion of Parcel C. South-facing view.



**Photo 2** Property overview. West side of Parcel B. East-facing view.



**Photo 4** Property overview. North portion of Parcel D. West-facing view.

## **Photo Plate 1**



Photo 5 Wetland 1. Located in the NE corner of Parcel B.



**Photo 7** Wetland 3. Located in the northern portion of Parcel D. Hamm Creek is in foreground.



**Photo 6** Wetland 2. Located in the west-central portion of Parcel C.



**Photo 8** Wetland 4. Located in southern portion of Parcel B.

# Photo Plate 2



**Photo 9** Stormwater conveyance ditch in the northeast portion of parcel B.



**Photo 11** Stormwater infiltration facility in PSE powerline right-of-way at north boundary of Parcel C.



**Photo 10** Roadside channel routing run-off to stormwater infiltration facility in PSE powerline right-of-way.



**Photo 12** Example of upland found throughout the mined portion of the site with puddles in tire ruts from recent rains.

## Photo Plate 3

# APPENDIX A

Field Survey Data

Project/Site: City of Seattle Meyers Way Remainder Property	/	City/Count	y: <u>Seattle</u>		Sampling Date:05/03/2011
Applicant/Owner: City of Seattle				State: WA	Sampling Point: SP1-1
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S32, T241</u>	I, R4EWM
Landform (hillslope, terrace, etc.): <u>hillslope</u>		Local relie	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>5%</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.3 <sup>.</sup>	1.04		Lona: 122.19.60	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable					
Are climatic / hydrologic conditions on the site typical for this					
			— 、	,	ant2 Vac M No 🗆
Are Vegetation, Soil, or Hydrology signi				ormal Circumstances" pres	
Are Vegetation, Soil, or Hydrology natur				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s	nowing	sampiin	g point i	ocations, transects,	important reatures, etc.
Hydrophytic Vegetation Present? Yes 🛛 No 🗌		ls th	e Sampled	I Area	
Hydric Soil Present? Yes ⊠ No □		with	in a Wetlar	nd? Yes 🗌 No	$\sim$
Wetland Hydrology Present? Yes 🗌 No 🛛					
Remarks: March and April 2011 have been unseasonably r additional inches of precipitation during March and April. S					
Area of sample plot is in area that was mined prior to 2002.	Appears t	o have bee	en reclaime	d more than 10 years ago t	based on size of trees.
VEGETATION – Use scientific names of plant					
Tree Stratum (Plot size: 5m)	Absolute % Cover			Dominance Test works	
1. Alnus rubra				Number of Dominant Spe That Are OBL, FACW, or	
2					1 AC. <u>5</u> (A)
				Total Number of Domina	
3				Species Across All Strata	a: <u>4</u> (B)
		= Total C		Percent of Dominant Spe That Are OBL, FACW, or	
Sapling/Shrub Stratum (Plot size: <u>3m</u> )					
1. <u>Rubus armeniacus</u>				Prevalence Index work	
2					Multiply by:
3					x 1 =
4					x 2 =
5					x 3 =
Herb Stratum (Plot size: <u>1.5m</u> )	5	= Total C	over		x 4 =
1. Juncus effusus	30	Y	FACW		x 5 = (D)
2. Poa pratensis	15		FAC	Column Totals:	(A) (B)
	5		FACW	Prevalence Index	= B/A =
4. Equisetum arvense			FAC	Hydrophytic Vegetation	n Indicators:
5. Agrostis capillaris				1 - Rapid Test for Hy	drophytic Vegetation
6. <u>Cirsium vulgare</u>			FACU	🛛 2 - Dominance Test i	s >50%
7				3 - Prevalence Index	is ≤3.0 <sup>1</sup>
8					aptations <sup>1</sup> (Provide supporting
9					or on a separate sheet)
10				5 - Wetland Non-Vas	
11					ytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 3m)		= Total C	over	'Indicators of hydric soil a be present, unless distur	and wetland hydrology must bed or problematic.
1				Hydrophytic	
۷	0			Vegetation Present? Yes	🛛 No 🗌
% Bare Ground in Herb Stratum <u>40</u>	0	= Total C	over	165	
Remarks:					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth	Matrix		Rec	lox Feature	es		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks
<u>0-8</u>	<u>5Y 3/1</u>	100					sandy loam
8-22	N 4/	95	<u>7.5YR 4/4</u>	5	С	Μ	clay loam
							·
			M=Reduced Matrix, C			ed Sand G	
-		cable to a	II LRRs, unless oth		ted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	. ,		Sandy Redox				2 cm Muck (A10)
	pipedon (A2)		Stripped Matri	• •			Red Parent Material (TF2)
	istic (A3)		Loamy Mucky			t MLRA 1)	
	en Sulfide (A4)	- ( 1 1 1 )	Loamy Gleyed	•	2)		Other (Explain in Remarks)
— ·	d Below Dark Surfac ark Surface (A12)	e (A11)	Depleted Matr				<sup>3</sup> Indicators of hydrophytic vegetation and
	Aucky Mineral (S1)		Depleted Dark				wetland hydrology must be present,
-	Gleyed Matrix (S4)		Redox Depres		')		unless disturbed or problematic.
-	Layer (if present):						
Type:							
	nches):		_				Hydric Soil Present? Yes 🖂 No 🗌
Remarks:							
HYDROLC	)GY						
	drology Indicators						
-				- 1 1			Consular ( Indiantors (2 on more required)
	·	one requir	ed; check all that ap				Secondary Indicators (2 or more required)
Surface	( )		☐ Water-Sta			except ML	
-	ater Table (A2)			IA, and 4E	3)		4A, and 4B)
Saturatio	. ,		Salt Crus	. ,			Drainage Patterns (B10)
—	larks (B1)		Aquatic II		. ,		Dry-Season Water Table (C2)
Sedimer	nt Denosits (B2)		Hydroger	sulfide O	dor (C1)		Saturation Visible on Aerial Imagery (C9)

Wetland Hydrology Indicators:								
Primary Indicators (minimum of	of one req	Secondary Indicators (2 or more required)						
Surface Water (A1)		pt MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,					
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)			
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)			
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)			
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3)			Oxidized Rhizospheres along Livir	ng Roots (C3)	Geomorphic Position (D2)			
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)			
□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6)				oils (C6)	FAC-Neutral Test (D5)			
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)				_RR A)	Raised Ant Mounds (D6) (LRR A)			
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)					Frost-Heave Hummocks (D7)			
Sparsely Vegetated Conca	ave Surfac	ce (B8)						
Field Observations:								
Surface Water Present?	Yes 🗌	No 🖂	Depth (inches):					
Water Table Present?	Yes 🖂	No 🗌	Depth (inches): <u>19</u>					
Saturation Present? Yes ⊠ No □ Depth (inches): <u>17</u> V (includes capillary fringe)				Wetland Hy	drology Present? Yes 🗌 No 🛛			
Describe Recorded Data (stre	am gauge	, monitor	ing well, aerial photos, previous inspec	tions), if availa	able:			
Remarks:								

Project/Site: City of Seattle Meyers Way Remainder Property	<u>y (</u>	City/Coun	ty: <u>Seattle</u>		Sampling Date:05/03/2011
Applicant/Owner: <u>City of Seattle</u>				State: WA	Sampling Point: SP1-2
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S32, T24I</u>	N, R4EWM
Landform (hillslope, terrace, etc.): hillslope		Local rel	ief (concave	, convex, none): <u>convex</u>	Slope (%): <u>2%</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.3 <sup>,</sup>	1.04		Lona: 122.19.60	Datum: unknown
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>					
Are climatic / hydrologic conditions on the site typical for this					ion <u>rrowolana</u>
Are Vegetation, Soil, or Hydrology sign		_	·	,	ant2 Vac M No 🗆
	-			ormal Circumstances" pres	
Are Vegetation, Soil, or Hydrology natures SUMMARY OF FINDINGS – Attach site map s				ed, explain any answers in	
SUMMART OF FINDINGS – Attach site map	snowing	sampin	ng point i	ocations, transects,	important leatures, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □		ls t	he Sampled	I Area	
Hydric Soil Present? Yes ⊠ No □		wit	hin a Wetlaı	nd? Yes 🛛 No	
Wetland Hydrology Present? Yes 🛛 No 🗌		2001/		for the first months and his	ad This are surfaced at 10
Remarks: March and April 2011 have been unseasonably r additional inches of precipitation during March and April. S					
Area of sample plot is in area that was mined prior to 2002	. Appears t	o have be	en reclaime	d more than 10 years ago l	based on size of trees.
VEGETATION – Use scientific names of plant	ts.				
		Dominar	t Indicator	Dominance Test works	heet:
Tree Stratum (Plot size: 5m)	% Cover	Species	? Status	Number of Dominant Sp	ecies
1. Alnus rubra	80	Y	FAC	That Are OBL, FACW, o	
2			<u> </u>	Total Number of Domina	nt
3				Species Across All Strat	
4			<u> </u>	Percent of Dominant Sp	ecies
Capling/Chrub Stratum (Dist size: 2m)	80	= Total	Cover	That Are OBL, FACW, o	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>3m</u> ) 1. Alnus rubra	15	v	FAC	Prevalence Index work	sheet:
1. <u>Alnus rubra</u> 2. <u>Rubus ursinus</u>					Multiply by:
3. <u>Rubus armeniacus</u>					x 1 =
4					x 2 =
5					x 3 =
	21				x 4 =
Herb Stratum (Plot size: 1.5m)					x 5 =
1. Phalaris arundinacea	15	Y	FACW	Column Totals:	
2. Equisetum arvense	<u>10</u>	Y	FAC		
3. Juncus effusus	5	Ν	FACW		= B/A =
4. Rumex crispus		<u>N</u>	FAC	Hydrophytic Vegetation	
5. Agrostis capillaris				1 - Rapid Test for Hy	
6. Lotus corniculatus		<u>N</u>	FAC	2 - Dominance Test	
7. Ranunculs repens				3 - Prevalence Index	
8					aptations <sup>1</sup> (Provide supporting or on a separate sheet)
9			<u> </u>	5 - Wetland Non-Vas	· ,
10			<u></u>	Problematic Hydroph	nytic Vegetation <sup>1</sup> (Explain)
11		<b>.</b>		<sup>1</sup> Indicators of hydric soil	and wetland hydrology must
Woody Vine Stratum (Plot size: 3m)	<u>52</u>	= Total	Cover	be present, unless distur	bed or problematic.
1. <u>Hedera helix</u>	1	N	NI		
2	<u> </u>		<u></u>	Hydrophytic	
	1	= Total	Cover	Vegetation Present? Yes	🛛 No 🗌
% Bare Ground in Herb Stratum 50			· _		
Remarks:					

Drafile Dee	anindiana (Daaanik										1 0int. <u>01 1-2</u>
	cription: (Describ		depth he				or confir	m the a	bsence	of indicators.)	
Depth (inches)	Matrix Color (moist)	%		or (moist)	Redox Features %	S Type <sup>1</sup>	Loc <sup>2</sup>	Texti	ıre	Remarks	
0-6	10YR 4/1	100		(					loam		
<u>6-22</u>	<u>N 4/</u>	<u>100</u>						loamy	sand		
	oncentration, D=D						d Sand C			ation: PL=Pore Lining	
-	Indicators: (App	licable to				ed.)				s for Problematic H	ydric Soils":
	. ,			Sandy Red						Muck (A10)	
☐ Histic Ep ☐ Black Hi	bipedon (A2)			Stripped M	cky Mineral (F1	) (except				Parent Material (TF2) Shallow Dark Surface	(TE12)
	en Sulfide (A4)			-	yed Matrix (F2)				-	(Explain in Remarks	
	d Below Dark Surfa	ace (A11)		Depleted N	• • • •			L			
	ark Surface (A12)	( )		•	k Surface (F6)			3	Indicator	s of hydrophytic vege	tation and
Sandy M	lucky Mineral (S1)								wetland hydrology must be present,		
	Bleyed Matrix (S4)			Redox Dep	pressions (F8)				unless	s disturbed or problem	atic.
	Layer (if present)										
Туре:											
Depth (in	iches):							Hyd	ric Soil	Present? Yes 🛛	No 🗌
Remarks:											
HYDROLO	ΟGY										
Wetland Hy	drology Indicator	's:									
Primary Indi	cators (minimum o	f one req	uired; ch	eck all that	apply)				Secon	dary Indicators (2 or r	nore required)
🛛 Surface	Water (A1)			□ Water	-Stained Leave	s (B9) ( <b>ex</b>	cept ML	RA	🗆 Wa	ater-Stained Leaves (I	39) ( <b>MLRA 1, 2,</b>
🛛 High Wa	ater Table (A2)				2, 4A, and 4B)		-			4A, and 4B)	
Saturatio				Salt C	rust (B11)				🗌 Dra	ainage Patterns (B10)	1
	larks (B1)			Aquat	ic Invertebrates	s (B13)			_	y-Season Water Table	
Sedimer	nt Deposits (B2)			🗌 Hydro	gen Sulfide Od	or (C1)			🗌 Sa	turation Visible on Ae	rial Imagery (C9)
🔲 Drift Dep	oosits (B3)			🗌 Oxidiz	ed Rhizospher	es along L	iving Ro	ots (C3)	🗌 Ge	omorphic Position (D	2)
Algal Ma	at or Crust (B4)			Prese	nce of Reduced	d Iron (C4)	)		🗌 Sh	allow Aquitard (D3)	
Iron Dep	oosits (B5)			Recer	nt Iron Reductio	n in Tilled	l Soils (C	6)	🗌 FA	C-Neutral Test (D5)	
Surface	Soil Cracks (B6)			Stunte	ed or Stressed I	Plants (D1	) ( <b>LRR /</b>	<b>A</b> )	🗌 Ra	ised Ant Mounds (D6	) (LRR A)
🗌 Inundati	on Visible on Aeria	I Imagery	' (B7)	Other	(Explain in Rer	narks)			🗌 Fro	ost-Heave Hummocks	(D7)
Sparsely	Vegetated Conca	ve Surfac	ce (B8)								
Field Obser	vations:										
Surface Wat	ter Present?	Yes 🛛	No 🗌	Depth (ir	nches): <u>1</u>						
Water Table	Present?	Yes 🛛	No 🗌	Depth (ir	nches): <u>9</u>						
Saturation F	Present?	Yes 🛛	No 🗌	Depth (ir	nches): <u>4</u>		We	tland Hy	drology	Present? Yes 🖂	No 🗌

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

Remarks:

(includes capillary fringe)

Project/Site: City of Seattle Meyers Way Remainder Proper	ty	City/County	/: <u>Seattle</u>		Sampling Date:05/03/2011
Applicant/Owner: <u>City of Seattle</u>				State: WA	Sampling Point: SP1-3
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S32, T241</u>	N, R4EWM
Landform (hillslope, terrace, etc.): <u>hillslope</u>		Local relie	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>5%</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.3	1.04		Long: 122.19.60	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable					
Are climatic / hydrologic conditions on the site typical for thi					in <u>rio wolana</u>
	-				ant2 Vac M No 🗆
Are Vegetation, Soil, or Hydrology sig				ormal Circumstances" pres	
Are Vegetation, Soil, or Hydrology natu	arally probler	matic?	(If need	ed, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes 🛛 No 🗌					
Hydric Soil Present? Yes ⊠ No □			e Sampled		
Wetland Hydrology Present? Yes ⊠ No □		with	in a Wetla	nd? Yes 🛛 No	
Remarks: March and April 2011 have been unseasonably	rainy with 1	69% of nor	mal rainfall	for the two months combin	ed. This amounts to 4.42
additional inches of precipitation during March and April.				<b>o</b> 1	•
Area of sample plot is in area that was mined prior to 2002	2. Appears t	o have bee	en reclaime	d more than 10 years ago b	based on size of trees.
VEGETATION – Use scientific names of plan	ts.				
		Dominant		Dominance Test works	heet:
<u>Tree Stratum</u> (Plot size: <u>5m</u> )		Species?		Number of Dominant Sp	
1. Populus balsamifera				That Are OBL, FACW, or	r FAC: <u>3</u> (A)
2				Total Number of Domina	
3				Species Across All Strata	a: <u>4</u> (B)
4				Percent of Dominant Spe	
Sapling/Shrub Stratum (Plot size: 3m)	<u>60</u>	= Total C	over	That Are OBL, FACW, o	r FAC: <u>75</u> (A/B)
1. Rubus armeniacus	10	Y	FACU	Prevalence Index work	sheet:
2				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
	<u>10</u>	= Total C	over		x 4 =
<u>Herb Stratum</u> (Plot size: <u>1.5m</u> )	45	V		UPL species	x 5 =
1. Phalaris arundinacea	10	Y		Column Totals:	(A) (B)
2. <u>Poa pratensis</u> 3. <u>Agrostis capillaris</u>			<u>FAC</u> FAC	Prevalence Index	= B/A =
4. Equisetum arvense			FAC	Hydrophytic Vegetation	
5. Juncus effusus				1 - Rapid Test for Hy	
6. Rumex crispus			FAC	2 - Dominance Test	
7				3 - Prevalence Index	is ≤3.0 <sup>1</sup>
8				4 - Morphological Ad	aptations <sup>1</sup> (Provide supporting
9					or on a separate sheet)
10				5 - Wetland Non-Vas	
11					ytic Vegetation <sup>1</sup> (Explain)
		= Total C	over	'Indicators of hydric soil be present, unless distur	and wetland hydrology must bed or problematic.
Woody Vine Stratum (Plot size: <u>3m</u> )				· · · · · · · · · · · · · · · · · · ·	
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 60	0	= Total C	over	Present? Yes	🛛 No 🗌
Remarks:				I	

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix			dox Feature		0			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks		
<u>0-8</u>	10YR 2/2	<u>100</u>					gr. s. loam		
<u>8-20+</u>	<u>N 4/</u>	95	<u>7.5YR 4/4</u>	5	<u>C</u>	M	loamy sand		
						·			
						·			
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, R	M=Reduced Matrix, (	CS=Covere	ed or Coa	ted Sand G	Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
Hydric Soil	Indicators: (Appl	cable to a	III LRRs, unless oth	erwise no	ted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :		
Histosol	(A1)		Sandy Redox	(S5)			2 cm Muck (A10)		
Histic E	oipedon (A2)		Stripped Matri	x (S6)			Red Parent Material (TF2)		
Black Hi	stic (A3)		Loamy Mucky	Mineral (F	1) ( <b>exce</b> p	t MLRA 1	) Very Shallow Dark Surface (TF12)		
🗌 Hydroge	en Sulfide (A4)		Loamy Gleyed	d Matrix (F2	2)		Other (Explain in Remarks)		
	d Below Dark Surfa	ce (A11)	Depleted Matr	ix (F3)					
Thick Date	ark Surface (A12)		Redox Dark S	urface (F6	)		<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy N	lucky Mineral (S1)		Depleted Dark	Surface (I	F7)		wetland hydrology must be present,		
•	Gleyed Matrix (S4)		Redox Depres	sions (F8)			unless disturbed or problematic.		
Restrictive	Layer (if present):								
Туре:			_						
Depth (ir	iches):		_				Hydric Soil Present? Yes 🛛 No 🗌		
Remarks:									
HYDROLC	GY								
Wetland Hy	drology Indicators	5:							
Primary Indi	cators (minimum of	one requi	red; check all that ap	ply)			Secondary Indicators (2 or more required)		
Surface	Water (A1)		Water-St	ained Leav	ves (B9) (	except ML	RA 🔲 Water-Stained Leaves (B9) (MLRA 1, 2		
🖂 High Wa	ater Table (A2)						4A, and 4B)		

$\boxtimes$	High	Water

Primary Indicators (minimum	of one req	uired; ch	eck all that apply)		Secondary Indicators (2 or more required)		
Surface Water (A1)			□ Water-Stained Leaves (B9) (exce	pt MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)		
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)		
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)		
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)			ng Roots (C3)	Geomorphic Position (D2)			
Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)					Shallow Aquitard (D3)		
□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Sc				oils (C6)	FAC-Neutral Test (D5)		
□ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (L				_RR A)	Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aeri	al Imagery	ι (B7)		Frost-Heave Hummocks (D7)			
Sparsely Vegetated Conc	ave Surfac	ce (B8)					
Field Observations:							
Surface Water Present?	Yes 🗌	No 🛛	Depth (inches):				
Water Table Present?	Yes 🛛	No 🗌	Depth (inches): <u>10</u>				
Saturation Present? (includes capillary fringe)	Yes 🛛	No 🗌	Depth (inches): <u>6</u>	Wetland Hy	drology Present? Yes 🛛 No 🗌		
Describe Recorded Data (stre	am gauge	e, monitor	ing well, aerial photos, previous inspec	tions), if availa	able:		
Remarks:							

Project/Site: City of Seattle Meyers Way Remainder Propert	y	City/Count	y: <u>Seattle</u>		Sampling Date:04/29/2011
Applicant/Owner: City of Seattle				State: WA	Sampling Point: SP1-4
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S32, T241</u>	N, R4EWM
Landform (hillslope, terrace, etc.): <u>hillslope</u>		Local reli	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>2%</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.3	1.04		Long: <u>122.19.60</u>	Datum: unknown
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>				NWI classificat	ion: <u>Upland</u>
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	ificantly dist	turbed?	Are "N	ormal Circumstances" pres	ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes 🛛 No 🗌					
Hydrophytic Vegetation Present?       Yes ⊠ No □         Hydric Soil Present?       Yes □ No ⊠			ne Sampleo		
Wetland Hydrology Present? Yes □ No ⊠		with	nin a Wetla	nd? Yes 🗌 No	$\sim$
Remarks: March and April 2011 have been unseasonably					
additional inches of precipitation during March and April. S					-
Area of sample plot is in area that was mined prior to 2002	. Appears t	o have be	en reclaime	d more than 10 years ago b	ased on size of trees.
VEGETATION – Use scientific names of plant	is.				
	Absolute		Indicator	Dominance Test works	heet:
<u>Tree Stratum</u> (Plot size: <u>5m</u> )	<u>% Cover</u>			Number of Dominant Spe	
1. <u>Alnus rubra</u>				That Are OBL, FACW, or	r FAC: <u>2</u> (A)
2				Total Number of Domina	-
3				Species Across All Strata	a: <u>3</u> (B)
4				Percent of Dominant Spe	
Sapling/Shrub Stratum (Plot size: 3m)	30	= Total C	Cover	That Are OBL, FACW, or	r FAC: <u>66</u> (A/B)
1. Alnus rubra	<u>20</u>	Y	FAC	Prevalence Index works	sheet:
2. Rubus armeniacus				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
	30			FACU species	x 4 =
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species	x 5 =
1. <u>Musci spp.</u>	<u>60</u>			Column Totals:	(A) (B)
2. <u>Poa pratensis</u>	<u>15</u>	<u>N</u>	FAC	Drovolonoo Indov	= B/A =
3. Phalaris arundinacea			FACW	Hydrophytic Vegetation	
4. Equisetum arvense			FAC	□ 1 - Rapid Test for Hy	
5. Agrostis capillaris				<ul> <li>☑ 1 Rapid Test Iol Hy</li> <li>☑ 2 - Dominance Test i</li> </ul>	
6. <u>Cirsium vulgare</u>		<u>N</u>	<u>FACU</u> FACU	3 - Prevalence Index	
7. Hypochaeris radicata         8					aptations <sup>1</sup> (Provide supporting
9					or on a separate sheet)
10				5 - Wetland Non-Vas	cular Plants <sup>1</sup>
11				Problematic Hydroph	nytic Vegetation <sup>1</sup> (Explain)
· · · ·	92	= Total C	Cover	<sup>1</sup> Indicators of hydric soil a be present, unless distur	and wetland hydrology must
Woody Vine Stratum (Plot size: <u>3m</u> )					
1				Hydrophytic	
2				Vegetation	
% Para Cround in Harb Stratum 10	0	= Total C	Cover	Present? Yes	🛛 No 🗌
% Bare Ground in Herb Stratum <u>10</u> Remarks:					
Romano.					

Depth	cription: (Describ Matrix		-		lox Feature	es				
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e	Remarks
<u>0-13</u>	<u>2.5Y 4/2</u>	100						sandy	oam	
<u>13-20+</u>	<u>2.5Y 4/2</u>	75	<u>7.5Y</u>	′R 4/4	25	<u>C</u>	M	sandy	oam	
							,			
<sup>1</sup> Tvpe: C=C	concentration, D=D	epletion.	RM=Red	uced Matrix.	CS=Covere	ed or Coat	ed Sand G	rains.	<sup>2</sup> Location: PL	=Pore Lining, M=Matrix.
	Indicators: (Appl									blematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox	(S5)				2 cm Muck (A1	0)
Histic E	pipedon (A2)		_	Stripped Matri	· · /				Red Parent Ma	. ,
	istic (A3)			_oamy Mucky			t MLRA 1)		Very Shallow D	Oark Surface (TF12)
	en Sulfide (A4)			_oamy Gleyed	•	2)			Other (Explain	in Remarks)
-	d Below Dark Surfa	ice (A11)		Depleted Matr				3.		
	ark Surface (A12)			Redox Dark S				'lı		phytic vegetation and
•	Aucky Mineral (S1)			Depleted Dark	•	,			•	gy must be present,
	Bleyed Matrix (S4)			Redox Depres	sions (F8)			-	unless disturbed	d or problematic.
	,									
Depth (ir	iches):							Hydr	c Soil Present?	Yes 🗌 No 🛛
Remarks:										
	OGY drology Indicator	s.								
-	cators (minimum o		uired: ch	eck all that ap	olv)				Secondary Indic	ators (2 or more required)
Surface		0.10104		Water-St		/es (R9) ( <b>e</b>	xcent MI I	RA		ed Leaves (B9) ( <b>MLRA 1, 2,</b>
	ater Table (A2)				4A, and 4E		xoopt me		4A, and	
Saturati	( )			□ Salt Crus		-)			Drainage Pa	,
	larks (B1)					e (B13)				Water Table (C2)
	nt Deposits (B2)			•	n Sulfide O	. ,			•	isible on Aerial Imagery (C9)
	posits (B3)						Living Roo	te(C3)		Position (D2)
	at or Crust (B4)				of Reduce	-	-	JIS (CS)	Shallow Aqu	
	. ,						+) d Soils (C6	2)		. ,
	oosits (B5) Soil Cracks (B6)						1) ( <b>LRR A</b>	,	FAC-Neutral     Raised Ant N	Mounds (D6) (LRR A)
_		Imagan	(P7)	_				.)		
	on Visible on Aeria y Vegetated Conca		. ,		plain in Re	ciliaiKS)				Hummocks (D7)
Field Obse			ле (во)							
				Donth (inch	20):					
	ter Present?	Yes	No 🖂	Depth (inche						
10/otor T-L'										
Water Table Saturation F		Yes □ Yes □	No 🛛 No 🖾	Depth (inche Depth (inche	,				Irology Present	? Yes 🗌 No 🖂

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

Remarks:

Project/Site: City of Seattle Meyers Way Remainder Prope	rty	City/Count	y: <u>Seattle</u>		_ Sampling Date:05/06	6/2011
Applicant/Owner: <u>City of Seattle</u>				State: WA	_ Sampling Point: SP2	-1
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S06, T2</u>	3N, R4EWM	
Landform (hillslope, terrace, etc.): <u>hillslope</u>		Local reli	ef (concave	, convex, none): <u>convex</u>	Slope (°	%): <u>10%</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)						
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>						
Are climatic / hydrologic conditions on the site typical for th						
, , ,				•	,	,
Are Vegetation, Soil, or Hydrology sig				ormal Circumstances" pre		1
Are Vegetation, Soil, or Hydrology nat				ed, explain any answers i		
SUMMARY OF FINDINGS – Attach site map	showing	samplin	ig point l	ocations, transects	, important featur	res, etc.
Hydrophytic Vegetation Present? Yes 🛛 No 🗌		ls tł	ne Sampleo	l Area		
Hydric Soil Present? Yes 🛛 No 🗌			nin a Wetla		No 🗔	
Wetland Hydrology Present? Yes 🛛 No 🗌						
Remarks: March and April 2011 have been unseasonably additional inches of precipitation during March and April.	Site conditio	ns are very	/ wet as a re	esult with large areas of p	ouddling water on the su	urface.
Area of sample plot is in area that was mined prior to 200		o nave be	en reclaime	d more than 10 years ago	based on size of trees	i.
VEGETATION – Use scientific names of plan					<u> </u>	
Tree Stratum (Plot size: 5m)	Absolute <u>% Cover</u>			Dominance Test work		
1				Number of Dominant S That Are OBL, FACW,		(A)
2						,
3				Total Number of Domir Species Across All Stra		(B)
4						(0)
Sapling/Shrub Stratum (Plot size: <u>3m)</u>		= Total C		Percent of Dominant S That Are OBL, FACW,		(A/B)
1. <u>Salix sitchensis</u>	40	Y	FACW	Prevalence Index wor	ksheet:	
2. Rubus armeniacus		Y	FACU	Total % Cover of:	Multiply by:	
3				OBL species	x 1 =	
4				FACW species	x 2 =	
5				FAC species	x 3 =	
	50	= Total C	Cover	FACU species	x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species	x 5 =	
1. Musci spp	20			Column Totals:	(A)	(B)
2. Agrostis capillaris		<u>Y</u>	FAC	Drevelence Index	< = B/A =	
3. Holcus lanatus			FAC	Hydrophytic Vegetatio		-
4. Equisetum arvense				□ 1 - Rapid Test for H		
5. <u>Tanacetum vulgare</u>				☐ 1 - Rapid Test for T ☑ 2 - Dominance Test		
6				□ 3 - Prevalence Inde		
7					Adaptations <sup>1</sup> (Provide su	innorting
8				data in Remark	s or on a separate shee	et)
10					· · · · · ·	
11					phytic Vegetation <sup>1</sup> (Exp	
Woody Vine Stratum (Plot size: 3m)	<u>50</u>	= Total C	Cover	be present, unless dist	il and wetland hydrolog urbed or problematic.	y must
1				Hydrophytic		
2				Vegetation		
	0	= Total C	Cover		es 🛛 No 🗌	
% Bare Ground in Herb Stratum <u>50</u> Remarks:						
-						

Profile Desc	cription: (Describe	to the de	pth needed to docu	nent the	indicator	or confirn	n the ab	sence of indicators.)		
Depth	Matrix		Redo	x Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re Remarks		
<u>0-8</u>	2.5Y 3/2	100					loam			
<u>8-19+</u>	<u>2.5Y 5/1</u>	90	<u>10YR 4/4</u>	10	<u>C</u>	<u>M</u>	<u>f. s. loa</u>	im		
				_						
<sup>1</sup> Type: C=C	oncentration, D=Dep	oletion, RM	/I=Reduced Matrix, CS	S=Covere	d or Coat	ed Sand Gi	rains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
			II LRRs, unless othe					dicators for Problematic Hydric Soils <sup>3</sup> :		
Histosol	(A1)		Sandy Redox (S	65)				] 2 cm Muck (A10)		
Histic Ep	oipedon (A2)		Stripped Matrix	(S6)			Ľ	Red Parent Material (TF2)		
□ Black Histic (A3) □ Loamy Mucky Mineral (F1) (except MLRA 1)								Very Shallow Dark Surface (TF12)		
							Other (Explain in Remarks)			
Depleted	Below Dark Surfac	e (A11)	Depleted Matrix	(F3)						
	ark Surface (A12)	. ,	Redox Dark Su	face (F6)			<sup>3</sup> I	ndicators of hydrophytic vegetation and		
	lucky Mineral (S1)		Depleted Dark S					wetland hydrology must be present,		
-	leyed Matrix (S4)		Redox Depress		,		unless disturbed or problematic.			
Restrictive	Layer (if present):									
Туре:			_							
Depth (in	ches):		_				Hydr	ic Soil Present? Yes 🛛 No 🗌		
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicators									
Primary Indi	cators (minimum of	one requir	ed; check all that appl	y)				Secondary Indicators (2 or more required)		
□ Surface	Water (A1)		🗌 Water-Stai	ned Leav	es (B9) ( <b>e</b>	xcept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,		
🛛 High Wa	ter Table (A2)		1, 2, 4/	A, and 4B	5)			4A, and 4B)		
🛛 Saturatio	on (A3)		Salt Crust	(B11)				Drainage Patterns (B10)		
	arks (B1)	Aquatic Invertebrates (B13) Dry-Season Water Table (C2)					Dry-Season Water Table (C2)			
	iment Deposits (B2)						Saturation Visible on Aerial Imagery (C9)			
	oosits (B3)					Living Roo	ots (C3)	Geomorphic Position (D2)		

Hendrid Hydrology Indiatols.									
Primary Indicators (minimum	of one requ	uired; ch	eck all that apply)		Secondary Indicators (2 or more required)				
Surface Water (A1)			U Water-Stained Leaves (B9) (exce	pt MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,				
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)				
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)				
Water Marks (B1)			Aquatic Invertebrates (B13)	(B13) Dry-Season Water Table (C					
Sediment Deposits (B2)			Saturation Visible on Aerial Imagery (C9						
Drift Deposits (B3)			ng Roots (C3)	Geomorphic Position (D2)					
Algal Mat or Crust (B4)				Shallow Aquitard (D3)					
Iron Deposits (B5)			oils (C6)	FAC-Neutral Test (D5)					
Surface Soil Cracks (B6)			RR A)	Raised Ant Mounds (D6) (LRR A)					
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)					Frost-Heave Hummocks (D7)				
Sparsely Vegetated Conc	ave Surfac	ce (B8)							
Field Observations:									
Surface Water Present?	Yes 🗌	No 🖂	Depth (inches):						
Water Table Present?	Yes 🛛	No 🗌	Depth (inches): <u>8</u>						
Saturation Present? (includes capillary fringe)	Yes 🛛	No 🗌	Depth (inches): 6	Wetland Hy	rdrology Present? Yes 🛛 No 🗌				
Describe Recorded Data (stre	am gauge	, monito	ing well, aerial photos, previous inspec	tions), if availa	able:				
Remarks:									

Project/Site: City of Seattle Meyers Way Remainder Propert	у	City/Count	y: <u>Seattle</u>		Sampling Date:05/06/2011
Applicant/Owner: <u>City of Seattle</u>				State: WA	Sampling Point: SP2-2
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S06, T23</u>	N, R4EWM
Landform (hillslope, terrace, etc.): hillslope		Local reli	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>10%</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.3	0.54		Long: 122.20.06	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable					
Are climatic / hydrologic conditions on the site typical for this					<u></u>
Are Vegetation, Soil, or Hydrology sigr			·	ormal Circumstances" pres	ant2 Vac 🕅 No 🗖
				·	
Are Vegetation, Soil, or Hydrology natu SUMMARY OF FINDINGS – Attach site map				ed, explain any answers in ocations transects	
	Showing	Sampin	ig point i		
Hydrophytic Vegetation Present? Yes 🗌 No 🖂		ls th	ne Sampled	l Area	
Hydric Soil Present? Yes □ No ⊠		with	nin a Wetlaı	nd? Yes 🗌 N	0 🛛
Wetland Hydrology Present? Yes No 🛛		C00/ af ac	ma al nainfall	for the two months combined	and This employee to 4.40
Remarks: March and April 2011 have been unseasonably additional inches of precipitation during March and April. 5					
Area of sample plot is in area that was mined prior to 2002		-		•	•
	••				
VEGETATION – Use scientific names of plan		<u> </u>			
Tree Stratum (Plot size: 5m)	Absolute <u>% Cover</u>			Dominance Test works	
1. Alnus rubra				Number of Dominant Sp That Are OBL, FACW, o	
2					
3				Total Number of Domina Species Across All Strat	
4				opeoles Across Air Otrat	α. <u>2</u> (D)
		= Total C		Percent of Dominant Sp That Are OBL, FACW, o	
Sapling/Shrub Stratum (Plot size: 3m)					
1. <u>Rubus armeniacus</u>	60	<u>Y</u>	FACU	Prevalence Index work	
2					Multiply by:
3					x 1 =
4					x 2 =
5					x 3 = <u>60</u>
Herb Stratum (Plot size: <u>1.5m)</u>	60	= Total C	Cover		x 4 = <u>280</u>
1. Tanacetum vulgare	30	Y	NI		x 5 = 25 (D)
2. Epilobium angustifolium			FACU	Column Totals: 95	(A) <u>365</u> (B)
3. <u>Cirsium vulgare</u>				Prevalence Index	= B/A = <u>3.8</u>
4. Geranium carolinianum				Hydrophytic Vegetatio	n Indicators:
5				1 - Rapid Test for Hy	/drophytic Vegetation
6				2 - Dominance Test	is >50%
7				3 - Prevalence Index	( is ≤3.0 <sup>1</sup>
8					laptations <sup>1</sup> (Provide supporting
9					or on a separate sheet)
10				5 - Wetland Non-Vas	
11					nytic Vegetation <sup>1</sup> (Explain)
		= Total C	Cover	be present, unless distu	and wetland hydrology must rbed or problematic.
Woody Vine Stratum (Plot size: <u>3m</u> )					
1				Hydrophytic	
2				Vegetation Present?	
% Bare Ground in Herb Stratum 55	0	= Total C	over	Present? Yes	5 🗌 No 🖾
Remarks:				1	

Samplin	a Point	SD2-2
Sampiin	y rom.	372-2

Profile Des	cription: (Describ		iepui need	led to docu	nent the i	nuicator	or contirm	the abs	sence of indicators.)
Depth	Matrix				x Feature				
(inches)	Color (moist)	%	Color (	<u>moist)</u>	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
0-4	<u>2.5Y 3/2</u>	100						sandy lo	oam
<u>4-16</u>	<u>2.5Y 5/3</u>	100						loamy s	and
16-20+	<u>2.5Y 5/1</u>	95	<u>10YR 4</u>	1/4	5	С	M	<u>f.s. loan</u>	n
			_						
						·			
						·			
						·			
						·			
	oncentration, D=De						ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
-	Indicators: (Appl	icable to				ed.)			dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	. ,			ndy Redox (S					2 cm Muck (A10)
☐ Histic Ep	pipedon (A2)			ipped Matrix amy Mucky N	. ,	) (avaant			Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			amy Gleyed I			WILKA I)		Other (Explain in Remarks)
	d Below Dark Surfa	ce (A11)		pleted Matrix		,			
	ark Surface (A12)	· · ·		dox Dark Sui	. ,			<sup>3</sup> In	dicators of hydrophytic vegetation and
	lucky Mineral (S1)			pleted Dark S		7)			wetland hydrology must be present,
	Bleyed Matrix (S4)		🗌 Re	dox Depress	ions (F8)			1	unless disturbed or problematic.
	Layer (if present):								
Туре:									
Depth (in	ches):							Hydri	c Soil Present? Yes 🗌 No 🛛
Remarks:									
-	drology Indicators								
Wetland Hy Primary Indi	drology Indicators cators (minimum of								Secondary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicators cators (minimum of Water (A1)			] Water-Stai	ned Leave		xcept MLR		Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa	rdrology Indicators cators (minimum of Water (A1) ater Table (A2)			Water-Stai 1, 2, 4/	ned Leave A, and 4B)		kcept MLR		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi Surface High Wa Saturatio	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3)			Water-Stai <b>1, 2, 4/</b> Salt Crust	ned Leave <b>A, and 4B</b> ) (B11)	)	xcept MLR	A	<ul> <li>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> </ul>
Wetland Hy         Primary Indi         Surface         High Wa         Saturation         Water M	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1)			Water-Stai <b>1, 2, 4/</b> Salt Crust Aquatic Inv	ned Leave A, and 4B) (B11) vertebrates	) s (B13)	xcept MLR	A	<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> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)			Water-Stai <b>1, 2, 4</b> Salt Crust Aquatic Inv Hydrogen	ned Leave A, and 4B) (B11) /ertebrates Sulfide Od	) s (B13) lor (C1)		A	<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 Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Deg	rdrology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)			Water-Stai <b>1, 2, 4</b> Salt Crust Aquatic Inv Hydrogen Oxidized F	ned Leave A, and 4B) (B11) vertebrates Sulfide Od Rhizospher	s (B13) lor (C1) res along	Living Root	A	<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 Hy         Primary Indi         Surface         High Wa         Saturation         Water M         Sedimer         Drift Dep         Algal Mater	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4)			Water-Stai <b>1, 2, 4</b> Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of	ned Leave A, and 4B (B11) vertebrates Sulfide Od Rhizospher of Reduce	) lor (C1) es along d Iron (C4	Living Root	8 <b>A</b> ts (C3)	<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 Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Algal Ma Iron Dep	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)			<ul> <li>Water-Stain</li> <li>1, 2, 4J</li> <li>Salt Crust</li> <li>Aquatic Invition</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iro</li> </ul>	ned Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher of Reduces n Reduction	s (B13) lor (C1) es along d Iron (C4 on in Tilled	Living Root	ts (C3)	<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>
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	one requ		<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iro</li> <li>Stunted or</li> </ul>	ned Leave A, and 4B (B11) vertebrates Sulfide Od Rhizospher of Reduce n Reductio Stressed	) lor (C1) lor along d Iron (C4 on in Tilled Plants (D	Living Root	ts (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy         Primary Indi         Surface         High Wa         Saturation         Water M         Sedimer         Drift Dep         Algal Ma         Iron Dep         Surface         Inundation	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	one requ	(B7)	Water-Stai <b>1, 2, 4</b> Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iroo Stunted or	ned Leave A, and 4B (B11) vertebrates Sulfide Od Rhizospher of Reduce n Reductio Stressed	) lor (C1) lor along d Iron (C4 on in Tilled Plants (D	Living Root	ts (C3)	<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>
Wetland Hy         Primary Indi         Surface         High Wa         Saturation         Water M         Sedimer         Drift Dep         Algal Ma         Iron Dep         Surface         Inundation	drology Indicators cators (minimum of Water (A1) ater 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 Concav	one requ	(B7)	<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iro</li> <li>Stunted or</li> </ul>	ned Leave A, and 4B (B11) vertebrates Sulfide Od Rhizospher of Reduce n Reductio Stressed	) lor (C1) lor along d Iron (C4 on in Tilled Plants (D	Living Root	ts (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy         Primary Indi         Surface         High Wa         Saturatia         Water M         Sedimer         Drift Dep         Algal Ma         Iron Dep         Surface         Inundati         Sparsely	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav rvations:	one requ Imagery /e Surface	(B7)	Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp	ned Leave A, and 4B, (B11) vertebrates Sulfide Od Rhizospher of Reduce n Reductio Stressed Iain in Rei	s (B13) lor (C1) es along d Iron (C4 on in Tilled Plants (D marks)	Living Root	ts (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy         Primary Indi         Surface         High Wa         Saturation         Water M         Sedimer         Drift Dep         Algal Ma         Iron Dep         Surface         Inundati         Sparsely	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: ter Present?	Imagery /e Surface Yes	(B7) □ (B7) □ (B8) No ⊠ □	<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iro</li> <li>Stunted or</li> </ul>	ned Leave A, and 4B, (B11) vertebrates Sulfide Od Rhizospher of Reduce n Reductio Stressed blain in Rei	) or (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Root	ts (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Orift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wate Vater Table Saturation F	cators (minimum 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 / Vegetated Concav rvations: ter Present? Present?	Imagery /e Surface Yes Yes	(B7) [ (B7) [ ⇒ (B8) [ No ⊠ [	<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iro</li> <li>Stunted or</li> <li>Other (Exp</li> </ul>	A, and 4B, (B11) vertebrates Sulfide Od Rhizospher of Reduces n Reductio Stressed Jain in Ref	) lor (C1) les along d Iron (C4 on in Tilled Plants (D marks)	Living Roof ) 1 Soils (C6) 1) ( <b>LRR A</b> )	ts (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wai Water Table Saturation F (includes ca	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 Concav vations: ter Present? Present? pillary fringe)	Imagery /e Surface Yes Yes Yes Yes Yes	(B7) □ (B7) □ (B8) No ⊠ □ No ⊠ □ No ⊠ □	<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence d</li> <li>Recent Iro</li> <li>Stunted or</li> <li>Other (Exp</li> </ul>	ned Leave <b>A, and 4B</b> , (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed plain in Ref (B):	s (B13) or (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roof ) 1 Soils (C6) 1) (LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wai Water Table Saturation F (includes ca	cators (minimum 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 / Vegetated Concav rvations: ter Present? Present?	Imagery /e Surface Yes Yes Yes Yes Yes	(B7) □ (B7) □ (B8) No ⊠ □ No ⊠ □ No ⊠ □	<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence d</li> <li>Recent Iro</li> <li>Stunted or</li> <li>Other (Exp</li> </ul>	ned Leave <b>A, and 4B</b> , (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed plain in Ref (B):	s (B13) or (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roof ) 1 Soils (C6) 1) (LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca Describe Ref	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 Concav vations: ter Present? Present? pillary fringe)	Imagery /e Surface Yes Yes Yes Yes Yes	(B7) □ (B7) □ (B8) No ⊠ □ No ⊠ □ No ⊠ □	<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence d</li> <li>Recent Iro</li> <li>Stunted or</li> <li>Other (Exp</li> </ul>	ned Leave <b>A, and 4B</b> , (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reduction Stressed plain in Ref (B):	s (B13) or (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roof ) 1 Soils (C6) 1) (LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wai Water Table Saturation F (includes ca	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 Concav vations: ter Present? Present? pillary fringe)	Imagery /e Surface Yes Yes Yes Yes Yes	(B7) □ (B7) □ (B8) No ⊠ □ No ⊠ □ No ⊠ □	<ul> <li>Water-Stai</li> <li>1, 2, 4/</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence d</li> <li>Recent Iro</li> <li>Stunted or</li> <li>Other (Exp</li> </ul>	ned Leave <b>A, and 4B</b> , (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reduction Stressed plain in Ref (B):	s (B13) or (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roof ) 1 Soils (C6) 1) (LRR A)	ts (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)

Project/Site: City of Seattle Meyers Way Remainder Propert	y	City/Count	y: <u>Seattle</u>		Sampling Date:05/06/2011
Applicant/Owner: City of Seattle				State: WA	Sampling Point: SP2-3
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S06, T23</u>	N, R4EWM
Landform (hillslope, terrace, etc.): <u>hillslope</u>		Local relie	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>2%</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.30	0.52		Long: <u>122.20.09</u>	Datum: unknown
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sigr	nificantly dist	turbed?	Are "N	ormal Circumstances" pres	ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers ir	
SUMMARY OF FINDINGS – Attach site map					
		-			-
Hydrophytic Vegetation Present?       Yes ⊠       No □         Hydric Soil Present?       Yes ⊠       No □		ls th	ne Sampleo	I Area	
Wetland Hydrology Present? Yes 🛛 No		with	nin a Wetla	nd? Yes 🛛 N	•
Remarks: March and April 2011 have been unseasonably	rainy with 10	69% of nor	mal rainfall	for the two months combir	ned. This amounts to 4.42
additional inches of precipitation during March and April.	Site conditio	ns are very	y wet as a re	esult with large areas of pu	ddling water on the surface.
Area of sample plot is in area that was mined prior to 2002	. Appears t	o have bee	en reclaime	d more than 10 years ago	based on size of trees.
VEGETATION – Use scientific names of plan	ts.				
	Absolute		Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 5m)	% Cover			Number of Dominant Sp	
1. Populus balsamifera				That Are OBL, FACW, c	r FAC: <u>4</u> (A)
2. <u>Salix scouleriana</u>				Total Number of Domina	
3				Species Across All Strat	a: <u>4</u> (B)
4				Percent of Dominant Sp	
Sapling/Shrub Stratum (Plot size: 3m)	<u>90</u>	= I otal C	Cover	That Are OBL, FACW, c	r FAC: <u>100</u> (A/B)
1				Prevalence Index work	sheet:
2				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
	0	= Total C	Cover	FACU species	x 4 =
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species	x 5 =
1. Equisetum arvense	<u>10</u>			Column Totals:	(A) (B)
2. Phalaris arundinacea	<u>10</u>			Prevalence Index	= B/A =
3. Ranunculus repens				Hydrophytic Vegetatio	
4				1 - Rapid Test for H	
5				☑ 2 - Dominance Test	
				☐ 3 - Prevalence Index	
7				4 - Morphological Ac	laptations <sup>1</sup> (Provide supporting
9				data in Remarks	or on a separate sheet)
10				5 - Wetland Non-Va	
11					nytic Vegetation <sup>1</sup> (Explain)
	25			<sup>1</sup> Indicators of hydric soil be present, unless distu	and wetland hydrology must
Woody Vine Stratum (Plot size: <u>3m</u> )					
1		. <u> </u>		Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 75	0	= Total C	Cover	Present? Yes	5 🖾 No 🗌
Remarks:				I	

Profile Des	cription: (Describ	e to the	depth n	eeded to docu	ument the	indicator	or confi	rm the a	bsence	of indicators.)
Depth	Matrix				lox Feature	s				· · · · · · · · · · · · · · · · · · ·
(inches)	Color (moist)	%	Col	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ire	Remarks
0-6	<u>10YR 2/1</u>	100						loam		
6-12+	<u>10YR 4/2</u>	90	<u>10Y</u>	'R 4/4	10	С	Μ	<u>gr. s.</u>	loam	
										. <u></u> .
<sup>1</sup> Type: C=C	oncentration, D=D	epletion,	RM=Red	duced Matrix, (	CS=Covere	d or Coat	ed Sand	Grains.	<sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	o all LRF	ts, unless oth	erwise not	ed.)		I	ndicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol				Sandy Redox						Muck (A10)
	bipedon (A2)			Stripped Matri	· · ·					Parent Material (TF2)
Black Hi	stic (A3) en Sulfide (A4)			Loamy Mucky			t MLRA 1			Shallow Dark Surface (TF12)
	d Below Dark Surfa	ace (A11)		Loamy Gleyed Depleted Matr		)		L		er (Explain in Remarks)
•	ark Surface (A12)			Redox Dark S	. ,			3	Indicato	rs of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark		7)				nd hydrology must be present,
Sandy G	Bleyed Matrix (S4)			Redox Depres	sions (F8)				unles	s disturbed or problematic.
Restrictive	Layer (if present)									
Туре:										
Depth (in	ches):							Hyd	ric Soil	Present? Yes 🛛 No 🗌
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	<u>cators (minimum o</u>	f one req	uired; ch	eck all that ap	ply)				Secor	ndary Indicators (2 or more required)
🛛 Surface	Water (A1)			U Water-St	ained Leave	es (B9) ( <b>e</b>	xcept M	LRA	ΠW	ater-Stained Leaves (B9) (MLRA 1, 2,
🛛 High Wa	ater Table (A2)			1, 2, 4	4A, and 4B	)				4A, and 4B)
🛛 Saturatio	on (A3)			Salt Crus	t (B11)				🗌 Dr	rainage Patterns (B10)
Water M	larks (B1)			Aquatic Ir	nvertebrate	s (B13)			🗌 Dr	ry-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydroger	n Sulfide Od	dor (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)			Oxidized	Rhizosphe	res along	Living Ro	oots (C3)	🗌 Ge	eomorphic Position (D2)
Algal Ma	at or Crust (B4)			Presence	of Reduce	d Iron (C	4)		🗌 Sł	nallow Aquitard (D3)
Iron Dep	oosits (B5)			Recent Ir	on Reduction	on in Tille	d Soils (C	6)	🗌 FA	AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted o	or Stressed	Plants (D	1) ( <b>LRR</b>	<b>A</b> )		aised Ant Mounds (D6) ( <b>LRR A</b> )
	on Visible on Aeria			Other (E)	oplain in Re	marks)			🗌 Fr	ost-Heave Hummocks (D7)
	/ Vegetated Conca	ve Surfa	ce (B8)							
Field Obser		—		_						
Surface Wat		Yes 🖂	No 🗌	Depth (inche						
Water Table		Yes 🖂	No 🗌	Depth (inche						
Saturation P	Present?	Yes 🛛	No 🗌	Depth (inche	es): <u>0</u>		We	tland Hy	drolog	y Present? Yes 🛛 No 🗌

Remarks: Water present in ditch to depth of 2 inches and as saturation to the surface on uphill side of ditch

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

(includes capillary fringe)

Project/Site: City of Seattle Meyers Way Remainder Property	<u>y </u>	City/Count	y: <u>Seattle</u>		Sampling Date:05/06/2011	
Applicant/Owner: City of Seattle				State: WA	_ Sampling Point: <u>SP2-4</u>	
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S06, T23I</u>	N, R4EWM	
Landform (hillslope, terrace, etc.): hillslope		Local reli	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>2%</u>	
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.30	0.52		Lona: 122.20.09	Datum: unknown	
Soil Map Unit Name: NRCS Soil Unit is Unavailable						
Are climatic / hydrologic conditions on the site typical for this					<u></u>	
			·	,	ant2 Vac 🕅 Na 🗖	
Are Vegetation, Soil, or Hydrology sign				ormal Circumstances" pres		
Are Vegetation, Soil, or Hydrology natur SUMMARY OF FINDINGS – Attach site map s				ed, explain any answers in		
	Jiowing	Sampin	ig point i			
Hydrophytic Vegetation Present? Yes ☐ No ⊠		ls th	ne Sampled	l Area		
Hydric Soil Present? Yes ⊠ No □		with	nin a Wetlaı	nd? Yes 🗌 No	D 🛛	
Wetland Hydrology Present? Yes 🗌 No 🛛		000/		for the first month of some his		
Remarks: March and April 2011 have been unseasonably r additional inches of precipitation during March and April. S						
Area of sample plot is in area that was mined prior to 2002.		-			•	
VEGETATION – Use scientific names of plant						
Tree Stratum (Plot size: 5m)	Absolute % Cover		t Indicator Status	Dominance Test works		
1. Salix scouleriana	40			Number of Dominant Sp That Are OBL, FACW, o		
2. Pseudotsuga menziesii						
3. Arbutus menziesii	40		UPL	Total Number of Domina Species Across All Strat		
4					a. <u>5</u> (D)	
		= Total C		Percent of Dominant Spe That Are OBL, FACW, o	ecies r FAC: 20 (A/B)	
Sapling/Shrub Stratum (Plot size: 3m)					(A/B)	
1. <u>Rubus armeniacus</u>	50	Y	FACU	Prevalence Index work	sheet:	
2				Total % Cover of:	Multiply by:	
3				OBL species	x 1 =	
4					x 2 =	
5					x 3 =	
Hark Charling (Distring 4 Fm)	50	= Total C	Cover	-	x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )	10	V			x 5 =	
1. <u>Polystichum munitum</u>	<u>10</u> 10			Column Totals:	(A) (B)	
2. Geranium robertianum           3				Prevalence Index	= B/A =	
4				Hydrophytic Vegetation		
5				□ 1 - Rapid Test for Hy		
6				2 - Dominance Test		
7				3 - Prevalence Index		
8					laptations <sup>1</sup> (Provide supporting	
9				data in Remarks	or on a separate sheet)	
10				5 - Wetland Non-Vas		
11					nytic Vegetation <sup>1</sup> (Explain)	
		= Total C	Cover	<sup>1</sup> Indicators of hydric soil be present, unless distur	and wetland hydrology must	
Woody Vine Stratum (Plot size: 3m)				be present, unless distur		
1				Hydrophytic		
2				Vegetation		
V Date Oracing in Light Oractions 22	0	= Total C	Cover	Present? Yes	□ No 🖾	
% Bare Ground in Herb Stratum <u>80</u> Remarks:						

#### Sampling Point: SP2-4

Depth (inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	dox Featur %		Loc <sup>2</sup>	Texture	Remarks
	2.5Y 3/2	100		/0				
<u>0-4</u>							sandy loa	
<u>4-10</u>	<u>2.5Y 4/2</u>	95	<u>10YR 4/4</u>	<u> </u>	<u>C</u>		gr.s. loan	n
<u>10-18+</u>	<u>2.5Y 5/1</u>	95	<u>10YR 4/4</u>	5	<u>C</u>	<u>M</u>	gr.s. loan	<u>n</u>
						<u> </u>		
	Concontration D=D		/I=Reduced Matrix,		od or Coat	ad Sand Gra	aine	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
			II LRRs, unless ot					cators for Problematic Hydric Soils <sup>3</sup> :
			Sandy Redox		,			2 cm Muck (A10)
	pipedon (A2)		Stripped Matr					Red Parent Material (TF2)
Black Hi	istic (A3)		Loamy Mucky	amy Mucky Mineral (F1) (except MLRA 1)				Very Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleye		2)			Other (Explain in Remarks)
· ·	d Below Dark Surfa	ace (A11)	Depleted Mat	• •	<b>、</b>		31	i stan statu da di su stati su sud
	ark Surface (A12) /lucky Mineral (S1)		□ Redox Dark S	•	,			icators of hydrophytic vegetation and vetland hydrology must be present,
	Gleyed Matrix (S4)		Redox Depre					inless disturbed or problematic.
	Layer (if present)	:		()				
Туре:			_					
Depth (in	nches):						Hydric	Soil Present? Yes 🛛 No 🗌
Remarks:								
HYDROLO	DGY							
-								
Drimon/Indi	drology Indicator		od: obook all that ar					accordony Indiantora (2 or more required)
	icators (minimum o		ed; check all that an		(DQ) (DQ) (d			econdary Indicators (2 or more required)
Surface	icators (minimum o Water (A1)		U Water-S	tained Leav		xcept MLR#		Water-Stained Leaves (B9) (MLRA 1, 2,
Surface	icators (minimum o Water (A1) ater Table (A2)		☐ Water-S <b>1, 2</b> ,	tained Leav 4A, and 4		xcept MLRA	<b>A</b> [	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Surface ☐ High Wa ☐ Saturatio	icators (minimum o Water (A1) ater Table (A2) on (A3)		☐ Water-S 1, 2, ☐ Salt Cru	tained Leav <b>4A, and 4</b> st (B11)	В)	xcept MLR#	A [	Water-Stained Leaves (B9) ( <b>MLRA 1, 2,</b> <b>4A, and 4B)</b> Drainage Patterns (B10)
Surface High Wa Saturatio	icators (minimum o Water (A1) ater Table (A2) on (A3) /larks (B1)		☐ Water-S 1, 2, ☐ Salt Cru ☐ Aquatic	tained Leav <b>4A, and 4</b> st (B11) nvertebrate	<b>B)</b> es (B13)	xcept MLR#		<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> </ul>
<ul> <li>Surface</li> <li>High Wa</li> <li>Saturation</li> <li>Water M</li> <li>Sedimer</li> </ul>	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)		☐ Water-S 1, 2, ☐ Salt Cru ☐ Aquatic ☐ Hydroge	tained Leav 4A, and 4 st (B11) Invertebrate n Sulfide C	<b>3)</b> es (B13) 9dor (C1)	-		<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>
<ul> <li>Surface</li> <li>High Wa</li> <li>Saturation</li> <li>Water M</li> <li>Sedimer</li> <li>Drift Dep</li> </ul>	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3)		☐ Water-S 1, 2, ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized	tained Leav <b>4A, and 4</b> st (B11) nvertebrate n Sulfide C I Rhizosphe	<b>B)</b> es (B13) odor (C1) eres along	Living Roots	A [ [ [ [ [ [ [ [] []]]]]]]]]]]]]]]]]]]]	<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>
<ul> <li>Surface</li> <li>High Wa</li> <li>Saturation</li> <li>Water M</li> <li>Sedimer</li> <li>Drift Dep</li> <li>Algal Ma</li> </ul>	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)		<ul> <li>☐ Water-S</li> <li>1, 2,</li> <li>☐ Salt Cru</li> <li>☐ Aquatic</li> <li>☐ Hydroge</li> <li>☐ Oxidized</li> <li>☐ Presence</li> </ul>	tained Lean 4 <b>A, and 4</b> I st (B11) nvertebrate n Sulfide C Rhizospho e of Reduc	<b>B)</b> es (B13) odor (C1) eres along ed Iron (C4	Living Roots	A [ [ [ [ [ [] [] [] [] [] [] [] [] [] []	<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>
<ul> <li>Surface</li> <li>High Wa</li> <li>Saturation</li> <li>Water M</li> <li>Sedimer</li> <li>Drift Dep</li> <li>Algal Ma</li> <li>Iron Dep</li> </ul>	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		☐ Water-S 1, 2, ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized ☐ Presenc ☐ Recent I	tained Lear 4A, and 4I st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduc ron Reduct	<b>B)</b> es (B13) odor (C1) eres along ed Iron (C4 ion in Tille	Living Roots	A [ [ [ [ [ [] [] [] [] [] [] [] [] [] []	<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>
<ul> <li>Surface</li> <li>High Wa</li> <li>Saturation</li> <li>Water M</li> <li>Sedimer</li> <li>Drift Dep</li> <li>Algal Ma</li> <li>Iron Dep</li> <li>Surface</li> </ul>	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	<u>f one requir</u>	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I	tained Lear 4A, and 4I st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduc ron Reduct	<b>B)</b> Defor (C1) Defor (C1) Defor (C4) Defor	Living Roots ) d Soils (C6)	A [ [ [ [ [ [] [] [] [] [] [] [] [] [] []	<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>
<ul> <li>Surface</li> <li>High Wa</li> <li>Saturation</li> <li>Water M</li> <li>Sedimer</li> <li>Drift Dep</li> <li>Algal Ma</li> <li>Iron Dep</li> <li>Surface</li> <li>Inundation</li> </ul>	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	<u>f one requir</u> I Imagery (E	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E	tained Leaver 4A, and 4I st (B11) nvertebrate n Sulfide C Rhizospho e of Reduct ron Reduct or Stressed	<b>B)</b> Defor (C1) Defor (C1) Defor (C4) Defor	Living Roots ) d Soils (C6)	A [ [ [ [ [ [] [] [] [] [] [] [] [] [] []	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
<ul> <li>Surface</li> <li>High Wa</li> <li>Saturation</li> <li>Water M</li> <li>Sedimer</li> <li>Drift Dep</li> <li>Algal Ma</li> <li>Iron Dep</li> <li>Surface</li> <li>Inundation</li> </ul>	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca	<u>f one requir</u> I Imagery (E	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E	tained Leaver 4A, and 4I st (B11) nvertebrate n Sulfide C Rhizospho e of Reduct ron Reduct or Stressed	<b>B)</b> Defor (C1) Defor (C1) Defor (C4) Defor	Living Roots ) d Soils (C6)	A [ [ [ [ [ [] [] [] [] [] [] [] [] [] []	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Surface     High Wa     Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundati     Sparsely     Field Obser	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca	f one requir I Imagery (E ve Surface	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E	tained Lean 4A, and 4I st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct ron Reduct or Stressed xplain in R	<b>B)</b> bdor (C1) eres along ed Iron (C- tion in Tille d Plants (D emarks)	Living Roots ) d Soils (C6)	A [ [ [ [ [ [] [] [] [] [] [] [] [] [] []	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Surface     High Wa     Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundati     Sparsely     Field Obser	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: tter Present?	I Imagery (E ve Surface Yes N	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E (B8)	tained Lear 4A, and 4I st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct ron Reduct or Stressed xplain in R	B) es (B13) odor (C1) eres along ed Iron (C- cion in Tille d Plants (D emarks)	Living Roots ) d Soils (C6)	A [ [ [ [ [ [] [] [] [] [] [] [] [] [] []	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Surface     High Wa     Saturatio     Water M     Sedimer     Drift Dep     Algal Ma     Iron Dep     Surface     Inundati     Sparsely     Field Obser     Surface Water Table     Saturation F	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? Present?	f one requir	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E (B8)	tained Lean <b>4A, and 4</b> and 4 st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct ron Reduct or Stressed xplain in R es): es):	B) es (B13) odor (C1) eres along ed Iron (C- dion in Tille d Plants (D emarks)	Living Roots 4) d Soils (C6) 1) ( <b>LRR A</b> )	A [ [ [] [] [] [] [] [] [] [] [] [] [] []	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Surface     High Wa     Saturatio     Water M     Sedimer     Drift Deg     Algal Ma     Iron Deg     Surface     Inundati     Sparsely     Field Obser     Surface Water Table     Saturation F     (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? apillary fringe)	I Imagery (E ve Surface Yes YesN YesN	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E (B8) Io Depth (inch Io Depth (inch	tained Lean <b>4A, and 4I</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct or Reduct or Stressed xplain in R es): es): es):	B) es (B13) odor (C1) eres along ed Iron (C4 cion in Tille d Plants (D emarks)	Living Roots 4) d Soils (C6) 1) (LRR A) Wetlan	A [ [] [] [] [] [] [] [] [] [] [] [] [] []	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
Surface     High Wa     Saturatio     Water M     Sedimer     Drift Deg     Algal Ma     Iron Deg     Surface     Inundati     Sparsely     Field Obser     Surface Water Table     Saturation F     (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? apillary fringe)	I Imagery (E ve Surface Yes YesN YesN	□       Water-S         1, 2,         □       Salt Cru         □       Aquatic         □       Hydroge         □       Oxidized         □       Presence         □       Recent I         □       Stunted         87)       Other (E         (B8)       Depth (inch	tained Lean <b>4A, and 4I</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct or Reduct or Stressed xplain in R es): es): es):	B) es (B13) odor (C1) eres along ed Iron (C4 cion in Tille d Plants (D emarks)	Living Roots 4) d Soils (C6) 1) (LRR A) Wetlan	A [ [] [] [] [] [] [] [] [] [] [] [] [] []	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)
Surface     High Wa     Saturatio     Water M     Sedimer     Drift Deg     Algal Ma     Iron Deg     Surface     Inundati     Sparsely     Field Obser     Surface Water Table     Saturation F     (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present? apillary fringe)	I Imagery (E ve Surface Yes YesN YesN	Water-S 1, 2, Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted 37) Other (E (B8) Io Depth (inch Io Depth (inch	tained Lean <b>4A, and 4I</b> st (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct or Reduct or Stressed xplain in R es): es): es):	B) es (B13) odor (C1) eres along ed Iron (C4 cion in Tille d Plants (D emarks)	Living Roots 4) d Soils (C6) 1) (LRR A) Wetlan	A [ [] [] [] [] [] [] [] [] [] [] [] [] []	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Saturation Visible on Aerial Imagery (C9)         Geomorphic Position (D2)         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6) (LRR A)         Frost-Heave Hummocks (D7)

Project/Site: City of Seattle Meyers Way Remainder Property	City/County:	Seattle	Sam	_ Sampling Date:05/06/2011				
Applicant/Owner: City of Seattle		State:	<u>NA</u> Sam	pling Point: <u>SP3-1</u>				
Investigator(s): E. Pritchard, J. Merriman, C. Wright	S	ection, Township, Ra	inge: <u>S05, T23N, R4</u> I	EWM				
Landform (hillslope, terrace, etc.): hillslope	Local relief	cal relief (concave, convex, none): <u>convex</u> Slope (%): <u>1</u>						
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat:	47.31.01	Long: <u>12</u>	Datum: <u>unknown</u>					
Soil Map Unit Name: NRCS Soil Unit is Unavailable			NWI classification: F	PFO Wetland				
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes 🗌	No 🛛 (If no, explai	ı in Remarks.)					
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 🛛 No 🗌								
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)								
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present?     Yes ⊠     No □       Hydric Soil Present?     Yes ⊠     No □       Wetland Hydrology Present2     Yes ⊠     No □		Sampled Area	Yes 🛛 No 🗌					

welland Hydrology Present?		
Remarks: March and April 2011 have be	en unseasonably rainy with 169%	6 of normal rainfall for the two months combined. This amounts to 4.42
additional inches of precipitation during I	March and April. Site conditions	are very wet as a result with large areas of puddling water on the surface.

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 5m)	% Cover	Species?	Status	Number of Dominant Species	
1. <u>Alnus rubra</u>	<u>40</u>	<u>Y</u>	FAC	That Are OBL, FACW, or FAC: 5	(A)
2. Thuja plicata	10	Y	FAC	Total Number of Dominant	
3					(B)
4					
	50	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
Sapling/Shrub Stratum (Plot size: 3m)					(70)
1. Rubus spectabilis	<u>50</u>	Y	FAC	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	_
3				OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	_
		= Total C		FACU species x 4 =	_
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	
1. Athyrium filix-femina	20	Υ	FAC	Column Totals: (A)	(B)
2. Solanum dulcamara	10	<u>Y</u>	FAC		_ 、 /
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				1 - Rapid Test for Hydrophytic Vegetation	
6				☑ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^1$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide supplication and the supplication of the supplication of the supervised structure of the supervised	
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	n)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology r	,
Woody Vine Stratum (Plot size: 3m)	<u>30</u>	= Total C	over	be present, unless disturbed or problematic.	naot
(/					
1			. <u> </u>	Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 50	<u>0</u>	= Total C	over	Present? Yes 🛛 No 🗌	
Remarks:					
itemane.					

Profile Desc	cription: (Describe	to the de	epth needed to docu	ment the	indicator	or confirm	the ab	sence of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e Remarks
<u>0-8</u>	10YR 2/2	100					loam	
8-20+	<u>10YR 4/1</u>	90	<u>10YR 4/4</u>	10	С	Μ	<u>f.s. loa</u>	<u>m</u>
	-						-	
<sup>1</sup> Type: C=C	oncentration, D=Der	pletion, RM	M=Reduced Matrix, C	S=Covere	d or Coat	ed Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
			II LRRs, unless othe					dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (	S5)				] 2 cm Muck (A10)
·	oipedon (A2)		Stripped Matrix	. ,				Red Parent Material (TF2)
Black Hi			Loamy Mucky N			t MLRA 1)		Very Shallow Dark Surface (TF12)
	n Sulfide (A4)	(	Loamy Gleyed		2)			Other (Explain in Remarks)
	l Below Dark Surfac ark Surface (A12)	e (A11)	Depleted Matrix Redox Dark Su	. ,			31	ndicators of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark	• • •				wetland hydrology must be present,
	leyed Matrix (S4)		Redox Depress	•	')			unless disturbed or problematic.
	Layer (if present):			( )				•
Туре:								
Depth (in	ches):						Hydr	ic Soil Present? Yes 🖂 No 🗌
Remarks:								
HYDROLO	GY							
	drology Indicators							
-			ed; check all that app	IV)				Secondary Indicators (2 or more required)
Surface	Water (A1)		☐ Water-Sta	ined Leav	es (B9) (e	except MLR	A	Water-Stained Leaves (B9) (MLRA 1, 2,
	iter Table (A2)			A, and 4E				4A, and 4B)
Saturatio			Salt Crust		•			Drainage Patterns (B10)
	arks (B1)		Aquatic In	` '	es (B13)			Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					□ Saturation Visible on Aerial Imagery (C9)
	oosits (B3)		Oxidized F	Rhizosphe	res along	Living Roots	s (C3)	Geomorphic Position (D2)
	t or Crust (B4)		□ Presence	of Reduce	ed Iron (C	4)		Shallow Aguitard (D3)

Primary Indicators (minimum of one re	quired; check	all that apply)	Secondary Indicators (2 or more required)			
Surface Water (A1)		] Water-Stained Leaves (B9) (exce	pt MLRA	U Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2)		1, 2, 4A, and 4B)		4A, and 4B)		
Saturation (A3)		] Salt Crust (B11)		Drainage Patterns (B10)		
Water Marks (B1)		] Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)		
Sediment Deposits (B2)		] Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)		] Oxidized Rhizospheres along Livir	ng Roots (C3)	Geomorphic Position (D2)		
Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Shallow Aquitard (D3)		
Iron Deposits (B5)		Recent Iron Reduction in Tilled So	ils (C6)	FAC-Neutral Test (D5)		
Surface Soil Cracks (B6)		] Stunted or Stressed Plants (D1) (L	RR A)	Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aerial Image	ry (B7) 🗌 🗌	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)		
Sparsely Vegetated Concave Surf	ace (B8)					
Field Observations:						
Surface Water Present? Yes	No 🗌 🛛	Depth (inches): <u>1</u>				
Water Table Present? Yes	No 🗌 🛛	Depth (inches): <u>0</u>				
Saturation Present? Yes X No Depth (inches): 0 (includes capillary fringe)				drology Present? Yes 🛛 No 🗌		
Describe Recorded Data (stream gaug	je, monitoring	g well, aerial photos, previous inspec	tions), if availa	able:		
Remarks: Water is also present at sur	ace within se	ep located approximately 5 feet from	n soil pit.			

Project/Site: City of Seattle Meyers Way Remainder Property City	y/County: Seattle Sampling Date:05/06/2011						
Applicant/Owner: City of Seattle	State: WA Sampling Point: SP3-2						
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, T23N, R4EWM</u>						
Landform (hillslope, terrace, etc.): hillslope	ocal relief (concave, convex, none): <u>convex</u> Slope (%): <u>2</u>						
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.31.0	1 Long: <u>122.19.52</u> Datum: <u>unknown</u>						
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>	NWI classification: Upland						
Are climatic / hydrologic conditions on the site typical for this time of year? Yes 🔲 🛛 No 🔀 (If no, explain in Remarks.)							
Are Vegetation, Soil, or Hydrology significantly disturbed? 🛛 Are "Normal Circumstances" present? Yes 🛛 No 🗌							
Are Vegetation, Soil, or Hydrology naturally problema	tic? (If needed, explain any answers in Remarks.)						
SUMMARY OF FINDINGS – Attach site map showing sa	SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present?       Yes □ No ⊠       Is the Sampled Area         Hydric Soil Present?       Yes □ No ⊠       within a Wetland?         Wetland Hydrology Present?       Yes □ No ⊠       No ⊠         Remarks: March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface.							

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

-	Absolute	Dominant	Indicator	Dominance Test worksheet:			
Tree Stratum (Plot size:)		Species?		Number of Dominant Species			
1. Thuja plicata		Y		That Are OBL, FACW, or FAC: <u>3</u> (A)	,		
2. Alnus rubra	40	Y	FAC	Total Number of Dominant			
3. Acer macrophyllum	10	N	FACU	Species Across All Strata: 6 (B)			
4							
	<u>90</u>			Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/E	3)		
Sapling/Shrub Stratum (Plot size:)		-			-)		
1. Oemlaria cerasiformis	20	<u>Y</u>	FACU	Prevalence Index worksheet:			
2. Sambucus racemosa	<u>10</u>	Y	FACU	Total % Cover of: Multiply by:			
3. Holodiscus discolor	5	N	FACU	OBL species <u>0</u> x 1 = <u>0</u>			
4. Rubus parviflorus	5	N	FAC	FACW species $0$ x 2 = $0$			
5. Rubus spectabilis	5	N	UPL	FAC species <u>105</u> x 3 = <u>315</u>			
	45	= Total C	Cover	FACU species <u>90</u> x 4 = <u>360</u>			
Herb Stratum (Plot size:)		-		UPL species <u>11</u> x 5 = <u>55</u>			
1. Polystichum munitum	40	<u>Y</u>	FACU	Column Totals: 206 (A) 730 (E	3)		
2. Urtica dioica	<u>20</u>	<u>Y</u>	FAC		,		
3. Gallium aperine	5	Ν	FACU	Prevalence Index = $B/A = 3.5$			
4. Tellmia grandiflora	5	N	UPL	Hydrophytic Vegetation Indicators:			
5. Geranium robertianum	1	N	UPL	1 - Rapid Test for Hydrophytic Vegetation			
6				2 - Dominance Test is >50%			
7				□ 3 - Prevalence Index is $\leq 3.0^{1}$			
8		<u> </u>		4 - Morphological Adaptations <sup>1</sup> (Provide supportidata in Remarks or on a separate sheet)	ng		
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	ł		
Woody Vine Stratum (Plot size: <u>3m</u> )	71	= Total C	Cover	be present, unless disturbed or problematic.			
1							
2				Hydrophytic Vegetation			
		= Total C		Present? Yes 🗌 No 🖂			
% Bare Ground in Herb Stratum 30							
Remarks:							
Profile Desc	ription: (Describe	to the dep	oth needed to docur	nent the indicator	or confirm	the abse	ence of indicators.)
--	--	-------------	------------------------------------	----------------------------------	---------------------	------------------	---
Depth	 Matrix			x Features			
(inches)	Color (moist)	%	Color (moist)	<u> </u>	Loc <sup>2</sup>	Texture	Remarks
<u>0-6</u>	10YR 3/2	100				sandy loa	am
6-14	<u>2.5Y 6/3</u>	100				sandy loa	am
14-18+	2.5Y 5/2	100				sandy loa	
						<b>,</b>	
·							
. <u> </u>							
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM	Reduced Matrix, CS	S=Covered or Coate	ed Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all	I LRRs, unless other	wise noted.)		Ind	icators for Problematic Hydric Soils <sup>3</sup> :
Histosol	. ,		Sandy Redox (S				2 cm Muck (A10)
-	ipedon (A2)		Stripped Matrix				Red Parent Material (TF2)
Black His			Loamy Mucky M		MLRA 1)		Very Shallow Dark Surface (TF12)
	n Sulfide (A4) I Below Dark Surface	(11)	Loamy Gleyed M     Depleted Matrix				Other (Explain in Remarks)
		= (ATT)		· /		<sup>3</sup> Inc	licators of hydrophytic vegetation and
Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)							wetland hydrology must be present,
				unless disturbed or problematic.			
-	Layer (if present):			. ,			•
Туре:			_				
Depth (in	ches):					Hydric	Soil Present? Yes 🗌 No 🖂
Remarks:						-	
HYDROLO							
-	drology Indicators:						
Primary Indi	cators (minimum of o	ne require	ed; check all that appl	y)			Secondary Indicators (2 or more required)
Surface	( )			ned Leaves (B9) (ex	cept MLR	<b>A</b> [	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)		1, 2, 44	A, and 4B)			4A, and 4B)
Saturatio	on (A3)		Salt Crust	(B11)			Drainage Patterns (B10)
Water M	arks (B1)		Aquatic Inv	ertebrates (B13)		C	Dry-Season Water Table (C2)
	t Deposits (B2)			Sulfide Odor (C1)			Saturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)		Oxidized R	hizospheres along I	Living Root	s (C3)	Geomorphic Position (D2)
	t or Crust (B4)			of Reduced Iron (C4	,	Γ	Shallow Aquitard (D3)
-	osits (B5)			n Reduction in Tilleo	• •	) [	FAC-Neutral Test (D5)
	Soil Cracks (B6)		_	Stressed Plants (D	1) ( <b>LRR A</b> )	C	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial Ir	0,1	, _ · ·	lain in Remarks)		Ľ	Frost-Heave Hummocks (D7)
	Vegetated Concave	Surface (	B8)				
Field Obser	vations:						

Project/Site: City of Seattle Meyers Way Remainder Property City/	County: Seattle Sampling Date:05/06/2011
Applicant/Owner: City of Seattle	State: WA Sampling Point: SP4-1
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: S05, T23N, R4EWM
Landform (hillslope, terrace, etc.): hillslope Loc	cal relief (concave, convex, none): convex Slope (%): 10%
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.52	Long: <u>122.19.45</u> Datum: <u>unknown</u>
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI classification: PFO Wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Y	Yes 🔲 No 🖾 (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbe	ed? Are "Normal Circumstances" present? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally problematic	c? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing san	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □	Is the Sampled Area

riyune oon riesent:		within a Wetland?	Yes 🖾 No 🗌
Wetland Hydrology Present?	Yes 🛛 No 🗌		
Remarks: March and April 2011 have be	en unseasonably rainy with 169%	o of normal rainfall for the two m	onths combined. This amounts to 4.42
additional inches of precipitation during I	March and April. Site conditions a	re very wet as a result with larg	e areas of puddling water on the surface.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 5m)	% Cover	Species?	Status	Number of Dominant Species	
1. Alnus rubra	80	<u>Y</u>	FAC	That Are OBL, FACW, or FAC: 3	(A)
2				Total Number of Dominant	
3					(B)
4					
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (	(Δ/R)
Sapling/Shrub Stratum (Plot size: 3m)				(	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1. Rubus spectabilis	20	<u>Y</u>	FAC	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	_
3				OBL species x 1 =	-
4				FACW species x 2 =	-
5				FAC species x 3 =	_
		= Total C		FACU species x 4 =	_
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	_
1. Lysichiton americanum	<u>20</u>	Y	OBL	Column Totals: (A)	(B)
2. Solanum dulcamara	10	<u>N</u>	FAC		
3. Athyrium filix-femina	10	<u>N</u>	FAC	Prevalence Index = B/A =	
4. Urtica dioica	<u>10</u>	N	FAC	Hydrophytic Vegetation Indicators:	
5. Nasturtium officinale	10	N	OBL	1 - Rapid Test for Hydrophytic Vegetation	
6. <u>Gallium aparine</u>	5	N	FACU	☑ 2 - Dominance Test is >50%	
7. Equsetum arvense			FAC	□ 3 - Prevalence Index is $\leq 3.0^{1}$	
8. <u>Tolmiea menziesii</u>				4 - Morphological Adaptations <sup>1</sup> (Provide supplication and the supplication of the supplication of the supervised structure of the supervis	orting
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 m	iust
Woody Vine Stratum (Plot size: 3m)	75	= Total C	over	be present, unless disturbed or problematic.	
; (/					
1		·		Hydrophytic	
2				Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum 25	0	= Total C	over		
Remarks:				1	

Profile Desc	cription: (Describe	to the de	epth needed to docu	ument the	indicator	or confirm	the abso	ence of indicate	ors.)	
Depth	Matrix			ox Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	<u> </u>	Remarks	;
<u>0-10</u>	<u>10YR 2/1</u>	100				<u> </u>	loam			
10-20+	10YR 4/1	90	10YR 4/4	10	С	<u>M s</u>	sandy lo	am		
		_								
		_								
17 0 0						<u> </u>		2		
			M=Reduced Matrix, C			ed Sand Gra		<sup>2</sup> Location: PL= icators for Prol		· ·
		cable to a			ied.)					yaric sons :
	(AT) bipedon (A2)		Sandy Redox	. ,				2 cm Muck (A10 Red Parent Mat		
Black Hi			Loamy Mucky	. ,				Very Shallow D	• • •	
	n Sulfide (A4)		Loamy Gleyed	•				Other (Explain i		
_ , .	Below Dark Surfac	ο (Δ11)	Depleted Matri	•	.)				III I CIIIdi Ko	)
	ark Surface (A12)		Redox Dark Si	. ,			<sup>3</sup> Inc	licators of hydro	nhvtic vege	etation and
	lucky Mineral (S1)		Depleted Dark	, ,				wetland hydrolog		
	leyed Matrix (S4)		Redox Depres	•	')		unless disturbed or problematic.			
-	Layer (if present):			. ,						
Туре:										
Depth (in	ches):		_				Hydric	Soil Present?	Yes 🖂	No 🗌
Remarks:										
HYDROLO										
-	drology Indicators									·
		one requir	ed; check all that app					Secondary Indica		
Surface			☐ Water-Sta		. , .	except MLRA	A L			B9) ( <b>MLRA 1, 2,</b>
	ter Table (A2)			IA, and 4E	5)			4A, and 4	•	
Saturatio	on (A3)		Salt Crus	t (B11)			[	Drainage Pat	tterns (B10	)
🔲 Water M	arks (B1)		Aquatic Ir	nvertebrate	s (B13)		[	Dry-Season	Water Table	e (C2)
Sedimer	nt Deposits (B2)		Hydrogen	Sulfide O	dor (C1)		[	Saturation Vi	sible on Ae	rial Imagery (C9)
Drift Dep	oosits (B3)		Oxidized	Rhizosphe	res along	Living Roots	s (C3)	Geomorphic	Position (D	2)
🗌 Algal Ma	t or Crust (B4)		Presence	of Reduce	ed Iron (C	4)	[	] Shallow Aqui	tard (D3)	
-	osits (B5)		Recent In	d Soils (C6)						

Stunted or Stressed Plants (D1) (LRR A)

Other (Explain in Remarks)

Depth (inches): 1

Depth (inches): 0

Depth (inches): 0

Remarks: Surface water is also present at surface within seep located approximately 5 feet from soil pit.

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

Yes 🛛 No 🗌

Yes 🛛 No 🗌

Yes 🛛 No 🗌

Field Observations: Surface Water Present?

Water Table Present?

(includes capillary fringe)

Saturation Present?

Surface Soil Cracks (B6)

Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

Raised Ant Mounds (D6) (LRR A)

Frost-Heave Hummocks (D7)

Wetland Hydrology Present? Yes 🛛 No 🗌

Project/Site: City of Seattle Meyers Way R	Remainder Property	City/Cour	nty: <u>Seattle</u>	mpling Date: <u>05/06/2011</u>	
Applicant/Owner: City of Seattle			State: \	<u>NA</u> Sa	mpling Point: <u>SP4-2</u>
Investigator(s): E. Pritchard, J. Merriman,	C. Wright		_ Section, Township, Ra	nge: <u>S05, T23N, R</u>	4EWM
Landform (hillslope, terrace, etc.): hillslope	9	Local re	lief (concave, convex, no	ne): <u>convex</u>	Slope (%): <u>10%</u>
Subregion (LRR): Northwest Forests and	Coasts (LRR A) La	ıt: <u>47.30.52</u>	Long: <u>12</u>	2.19.45	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Ur	navailable			NWI classification:	Upland
Are climatic / hydrologic conditions on the	site typical for this time	e of year? Yes [	🗌 No 🛛 (If no, explair	n in Remarks.)	
Are Vegetation, Soil, or Hyd	rology significa	ntly disturbed?	Are "Normal Circur	nstances" present	? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hyd	rology naturally	problematic?	(If needed, explain	any answers in Re	marks.)
SUMMARY OF FINDINGS - Atta	ach site map sho	wing sampli	ng point locations	, transects, im	portant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ⊠ Yes □ No ⊠ Yes □ No ⊠		the Sampled Area thin a Wetland?	Yes 🗌 No 🛛	

Remarks: March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 5m)	% Cover	Species?	Status	Number of Dominant Species
1. Alnus rubra	40	Υ	FAC	That Are OBL, FACW, or FAC: <u>3</u> (A)
2. Acer macrophyllum	<u>30</u>	Υ	FACU	Total Number of Dominant
3				Species Across All Strata: <u>6</u> (B)
4				
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
Sapling/Shrub Stratum (Plot size: 3m)				
1. Rubus spectabilis	20	Y	FAC	Prevalence Index worksheet:
2. Oemlaria cerasiformis	20	Y	FACU	Total % Cover of: Multiply by:
3				OBL species <u>0</u> x 1 = <u>0</u>
4				FACW species <u>0</u> x 2 = <u>0</u>
5				FAC species <u>105</u> x 3 = <u>315</u>
	40			FACU species <u>80</u> x 4 = <u>320</u>
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species <u>0</u> x 5 = <u>0</u>
1. Urtica dioica	40	Y	FAC	Column Totals: <u>185</u> (A) <u>635</u> (B)
2. Polystichum munitum	<u>20</u>	Y	FACU	( )
3. <u>Gallium aparine</u>	<u>10</u>	<u>N</u>	FACU	Prevalence Index = $B/A = 3.4$
4. Tolmiea menziesii	5	N	FAC	Hydrophytic Vegetation Indicators:
5				1 - Rapid Test for Hydrophytic Vegetation
6				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: 3m)	<u>65</u>	= Total C	over	be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation Present? Yes □ No ⊠
% Bare Ground in Herb Stratum 35	0	= Total C	over	Present? Yes 🗌 No 🛛
Remarks:				

Sampling Point: SP4-2

Profile Des	cription: (Describe	to the dep	oth needed to docu	nent the i	ndicator	or confirm	the ab	sence of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	re Remarks
<u>0-7</u>	<u>10YR 2/2</u>	100					sandy l	loam
<u>7-15+</u>	<u>10YR 4/3</u>	<u>100</u>					sandy l	oam
<u>15-18+</u>	<u>10YR 4/2</u>	100					<u>sandy l</u>	oam
				_				
	oncentration, D=Dep	letion RM	=Reduced Matrix C		d or Coate		aine	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Applic							dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Redox (S		,			2 cm Muck (A10)
	pipedon (A2)		Stripped Matrix					Red Parent Material (TF2)
Black Hi	stic (A3)		Loamy Mucky M	lineral (F1	) (except	MLRA 1)		] Very Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed I		)			Other (Explain in Remarks)
	d Below Dark Surface	e (A11)	Depleted Matrix	. ,			3.	
	ark Surface (A12)		Redox Dark Su	. ,	7)		°Ir	ndicators of hydrophytic vegetation and
-	lucky Mineral (S1) Gleyed Matrix (S4)		Depleted Dark S     Redox Depress		/)			wetland hydrology must be present, unless disturbed or problematic.
-	Layer (if present):							
_								
	ches):						Hvdri	ic Soil Present? Yes 🗌 No 🖂
Remarks:							,	
HYDROLO	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of c	ne require	d; check all that appl	y)				Secondary Indicators (2 or more required)
Surface	Water (A1)		□ Water-Stai	ned Leave	es (B9) ( <b>e</b>	xcept MLR	A	□ Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ater Table (A2)		1, 2, 4/	A, and 4B	)	-		4A, and 4B)
Saturatio	on (A3)		Salt Crust	(B11)				Drainage Patterns (B10)
Water M	larks (B1)		Aquatic Inv	vertebrates	s (B13)			Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)		Hydrogen	Sulfide Oc	lor (C1)			Saturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Oxidized R	hizospher	es along	Living Root	s (C3)	Geomorphic Position (D2)
	at or Crust (B4)		Presence of		•	,		Shallow Aquitard (D3)
	oosits (B5)					d Soils (C6)		FAC-Neutral Test (D5)
	Soil Cracks (B6)					1) ( <b>LRR A</b> )		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial I	0,1,	,	lain in Re	marks)			Frost-Heave Hummocks (D7)
	/ Vegetated Concave	e Surface (	38)			- r		
Field Obser		/ D	Death (inches					
Surface Wat			Depth (inches	· ·		1		
Water Table			Depth (inches			187-11		
Saturation F (includes ca	resent? Y pillary fringe)	íes 🗌 No	Depth (inches	s):		Wetla	and Hyd	drology Present? Yes 🗌 No 🛛
Describe Re	corded Data (stream	gauge, m	onitoring well, aerial	photos, pr	evious ins	spections), i	if availal	ble:
Remarks:								

Project/Site: City of Seattle Meyers Way Remainder Property City.	/County: Seattle Sampling Date:05/06/2011
Applicant/Owner: City of Seattle	State: WA Sampling Point: SP5-1
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S32, T24N, R4EWM</u>
Landform (hillslope, terrace, etc.): slope Loc	cal relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.31.03	Long: <u>122.20.04</u> Datum: <u>unknown</u>
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI classification: PSS Wetland
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 disturb	ed? Are "Normal Circumstances" present? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally problemati	c? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	mpling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □	Is the Sampled Area

<b>j</b>			within a Wetland?	Yes 🖂 No 🛛	
Wetland Hydrology Present?	Yes 🖂	No 🗌			
		, ,		months combined. This amounts to 4.42 urge areas of puddling water on the surface.	
No recent disturbance. Area groundwater.	of sample plot is in a	rea that was mined prior	to 2002. Sample plot is loca	ated in stormwater ditch that intercepts	

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u>	(A)
2 3				Total Number of Dominant Species Across All Strata: 5	(B)
4					(8)
Sapling/Shrub Stratum (Plot size: irregular)		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
1. Salix sitchensis	40	<u>Y</u>	FACW	Prevalence Index worksheet:	
2. Rubus armeniacus	20	<u>Y</u>	FACU	Total % Cover of: Multiply by:	
3				OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	_
		= Total C		FACU species x 4 =	_
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	_
1. Equisetum arvense	<u>25</u>	<u>Y</u>	FAC	Column Totals: (A)	(B)
2. <u>Scirpus microcarpus</u>	<u>10</u>	<u>Y</u>	OBL		
3. Nasturtium officinale	<u>10</u>	<u>Y</u>	OBL	Prevalence Index = B/A =	
4. Juncus effusus	5	<u>N</u>	FACW	Hydrophytic Vegetation Indicators:	
5				1 - Rapid Test for Hydrophytic Vegetation	
6				☑ 2 - Dominance Test is >50%	
7			. <u> </u>	□ 3 - Prevalence Index is $\leq 3.0^1$	
8				<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supplication and the supplication of the supplication of the supervised of the supe</li></ul>	
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology r	must
Woody Vine Stratum (Plot size: 3m)	<u>50</u>	= Total C	over	be present, unless disturbed or problematic.	
1					
2				Hydrophytic Vegetation	
		= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum 50			-		
Remarks:					

Profile Desc	cription: (Describe	to the depth	needed to docu	ment the ir	ndicator	or confirm t	the abse	ence of indicators.)
Depth	Matrix	-		ox Features				
(inches)	Color (moist)	<u>%</u> <u>C</u>	olor (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8	10YR 2/2	100					sandy loa	am
8-19+	5Y 4/1	100				ŀ	loamy sa	nd
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion RM=R	educed Matrix C	S=Covered	or Coate	ed Sand Grai	ins	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Applic							cators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		] Sandy Redox (	S5)				2 cm Muck (A10)
Histic Ep	pipedon (A2)		Stripped Matrix	: (S6)				Red Parent Material (TF2)
Black Hi	( )		Loamy Mucky	• • •	•	MLRA 1)		Very Shallow Dark Surface (TF12)
	n Sulfide (A4)		,					Other (Explain in Remarks)
•	l Below Dark Surface Irk Surface (A12)	e (A11) 🛛 🖄		• •			<sup>3</sup> Ind	icators of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark	. ,	7)			vetland hydrology must be present,
-	leyed Matrix (S4)		Redox Depress	•	,			inless disturbed or problematic.
-	Layer (if present):		•	( )				
Туре:								
Depth (in	ches):						Hydric	Soil Present? Yes 🖂 No 🗌
Remarks:								
HYDROLO	CV							
	drology Indicators:							
-	cators (minimum of o	no roquirod:	chock all that and				c	secondary Indicators (2 or more required)
Surface	· · · · · · · · · · · · · · · · · · ·	ne required,			o (PO) (o			
	ter Table (A2)		Water-Sta	A, and 4B)			• L	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Saturatio			Salt Crust				г	Drainage Patterns (B10)
	arks (B1)			vertebrates	(B13)		с Г	Dry-Season Water Table (C2)
	it Deposits (B2)		_ ·	Sulfide Odd	. ,		Г	Saturation Visible on Aerial Imagery (C9)
	oosits (B3)					Living Roots	s (C3)	<b>-</b>
	t or Crust (B4)			of Reduced	-	-	, , L	Shallow Aquitard (D3)
	osits (B5)					d Soils (C6)		FAC-Neutral Test (D5)
-	Soil Cracks (B6)			r Stressed F			C	Raised Ant Mounds (D6) (LRR A)
🗌 Inundatio	on Visible on Aerial Ir	magery (B7)	Other (Ex	plain in Ren	narks)		Ľ	Frost-Heave Hummocks (D7)

	aage. j	()		
Sparsely Vegetated Conc	ave Surfac	e (B8)		
Field Observations:				
Surface Water Present?	Yes 🛛	No 🗌	Depth (inches):	
Water Table Present?	Yes 🛛	No 🗌	Depth (inches): 2	
Saturation Present? (includes capillary fringe)	Yes 🛛	No 🗌	Depth (inches): 0	Wetland Hydrology Present? Yes 🛛 No 🗌
Describe Recorded Data (stre	am gauge	, monitor	ing well, aerial photos, previous inspec	tions), if available:
Remarks: The delineated area within the ditch from the point			, 0 0	where it intercepts a sandy loam layer that is saturated. Flow

Project/Site: City of Seattle Meyers Way Remainder Property	City/County: Seattle	Sampling Date:05/03/2011
Applicant/Owner: City of Seattle	State: WA	Sampling Point: UPL-1
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, T231</u>	I, R4EWM
Landform (hillslope, terrace, etc.): hillslope	Local relief (concave, convex, none): <u>convex</u>	Slope (%): <u>2</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30	.54 Long: <u>122.19.56</u>	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI classifica	ation: <u>Upland</u>
Are climatic / hydrologic conditions on the site typical for this time of year	? Yes 🔲 No 🛛 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly distu	urbed? Are "Normal Circumstances" pre	sent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally problem	atic? (If needed, explain any answers in	n Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present?       Yes □       No ⊠         Hydric Soil Present?       Yes □       No ⊠         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland? Yes 🗌 N	lo 🖂

Remarks: March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface. No recent disturbance. Area of sample plot was previously mined but appears to have been reclaimed more than 40 years ago based on size of trees.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: )		Species?			
1. Populus balsamifera	80	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)
2. Alnus rubra	20	Y	FAC		
3				Total Number of Dominant Species Across All Strata: 6 (	(B)
4				· 、	-,
	100	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (	(A/R)
Sapling/Shrub Stratum (Plot size:)				(	
1. Rubus armeniacus	10	<u>Y</u>	FACU	Prevalence Index worksheet:	
2. Oemlaria cerasiformis	5	<u>N</u>	FACU	Total % Cover of:Multiply by:	-
3. Sambucus racemosa	5	<u>N</u>	FACU	OBL species x 1 =	•
4. Rubus parviflorus	5	N	FAC	FACW species x 2 =	
5. Holodiscus discolor	3	N	UPL	FAC species x 3 =	-
	28	= Total C	over	FACU species x 4 =	_
Herb Stratum (Plot size:)				UPL species x 5 =	_
1. Polystichum munitum	10	<u>Y</u>	FACU	Column Totals: (A)	(B)
2. Geranium robertianum	10	<u>Y</u>	UPL		
3. Gallium aperine	5	N	FACU	Prevalence Index = B/A =	
4. Tellmia grandiflora	1	<u>N</u>	UPL	Hydrophytic Vegetation Indicators:	
5. Hydrophyllum tenuipes	1	<u>N</u>	UPL	1 - Rapid Test for Hydrophytic Vegetation	
6				□ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^1$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide suppr data in Remarks or on a separate sheet)	orting
9				$\Box$ 5 - Wetland Non-Vascular Plants <sup>1</sup>	
10			. <u> </u>	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology m	
Woody Vine Stratum (Plot size: 3m)	<u>27</u>	= Total C	over	be present, unless disturbed or problematic.	usi
1. <u>Hedera helix</u>	5	Y	NI		
2				Hydrophytic Vegetation	
	5	= Total C	over	Present? Yes No 🛛	
% Bare Ground in Herb Stratum 60					
Remarks:					

Profile Des	cription: (Describ	o to the de	nth needed	to docum	ont the in	dicator	or confir	n tho abs	sence of indicators.)
			pin needed					ii tile abs	sence of mulcators.)
Depth (inches)	Matrix Color (moist)	%	Color (moi		Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
<u>0-2</u>	<u>10YR 3/2</u>	100					<u> </u>	sandy lo	<u></u>
<u>2-10</u>	2.5Y 6/3	100						<u>loamy s</u>	and
10-20	<u>2.5Y 5/2</u>	100						loamy s	and
								-	
				·	·				
				·					
							·		
				<u> </u>					
				<u> </u>					
	concentration, D=D						d Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	I LRRs, unl	ess otherw	vise note	d.)		Inc	dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	· · /		Sandy						2 cm Muck (A10)
	pipedon (A2)			d Matrix (S	,				Red Parent Material (TF2)
	istic (A3)		🗌 Loamy	-		(except	MLRA 1)		Very Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy	-					Other (Explain in Remarks)
	d Below Dark Surfa	ce (A11)		ed Matrix (	,			з.	
	ark Surface (A12)			Dark Surfa	• •				dicators of hydrophytic vegetation and
-	Aucky Mineral (S1)		·	ed Dark Su	•	)			wetland hydrology must be present,
	Bleyed Matrix (S4) Layer (if present):		Redox	Depressio	IIS (FO)				unless disturbed or problematic.
	iches):		_					Hvdrid	c Soil Present? Yes 🗌 No 🖂
Remarks:			-						
HYDROLC									
	-								
-	drology Indicator		ad: chack all	that annly)					Secondary Indicators (2 or more required)
Surface				ater-Staine		(R0) ( <b>o</b> )	cont ML		□ Water-Stained Leaves (B9) ( <b>MLRA 1, 2</b> ,
	ater Table (A2)				and 4B)	s (D9) ( <b>e</b> x		KA	4A, and 4B)
-			Πe	alt Crust (E					Drainage Patterns (B10)
☐ Saturati ☐ Water M						(D12)			
	( )			quatic Inve		. ,			Dry-Season Water Table (C2)
	nt Deposits (B2)			ydrogen Si					Saturation Visible on Aerial Imagery (C9)
	posits (B3)			xidized Rh		-	-	Dis(C3)	Geomorphic Position (D2)
-	at or Crust (B4)			resence of		•	,		Shallow Aquitard (D3)
-	posits (B5)			ecent Iron			``	,	FAC-Neutral Test (D5)
	Soil Cracks (B6)			tunted or S			) (LRR A	.)	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	••••		ther (Expla	un in Rem	narks)			Frost-Heave Hummocks (D7)
	y Vegetated Conca	ve Surface	(B8)						
Field Obse		v							
	ter Present?			h (inches):					
Water Table				h (inches):					_
Saturation F (includes ca	Present? pillary fringe)	Yes 🗌 🛛 N	lo 🛛 Depi	h (inches):			Wet	land Hyd	rology Present? Yes 🗌 No 🛛
	ecorded Data (strea	m gauge, n	nonitoring we	ll, aerial pl	notos, pre	vious ins	pections)	, if availab	le:

Remarks:

Project/Site: City of Seattle Meyers Way Remainder Propert	y (	City/County	: <u>Seattle</u>		Sampling Date:05/03/2011
Applicant/Owner: <u>City of Seattle</u>				State: WA	Sampling Point: UPL-2
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	ownship, Range: <u>S5</u>	
Landform (hillslope, terrace, etc.): <u>hillslope</u>		Local relie	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>2</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.3	0.57		Long: 122.20.00	Datum: Unknown
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology signi			— 、	rmal Circumstances" prese	nt? Yes 🕅 No 🗍
Are Vegetation, Soil, or Hydrology addin Are Vegetation, Soil, or Hydrology natu				led, explain any answers in	
SUMMARY OF FINDINGS - Attach site map					·
					-
Hydrophytic Vegetation Present? Yes □ No ⊠		Is th	e Sampleo	d Area	
Hydric Soil Present?         Yes □         No ⊠           Wetland Hydrology Present?         Yes □         No ⊠		with	in a Wetla	nd? Yes 🗌 No	
Remarks: March and April 2011 have been unseasonably	rainy with 1	69% of nor	mal rainfall	for the two months combin	ed This amounts to 4 42
additional inches of precipitation during March and April.					
No recent disturbance to the area. Mining operations end	ed in 2002.	Soils are n	nixed from I	historic mining practices.	
VEGETATION – Use scientific names of plan	ts.				
	Absolute	Dominant	Indicator	Dominance Test works	heet:
Tree Stratum (Plot size:)	% Cover			Number of Dominant Sp	
1				That Are OBL, FACW, o	r FAC: <u>1</u> (A)
2				Total Number of Domina	nt
3				Species Across All Strat	a: <u>3</u> (B)
4				Percent of Dominant Spe	ecies
Sapling/Shrub Stratum (Plot size: <u>3m)</u>	0	= Total C	over		r FAC: <u>33</u> (A/B)
1. Cytisus scoparius	40	Y	UPI	Prevalence Index work	sheet:
2. Rubus armeniacus					Multiply by:
3. Populus balsamifera					x 1 =
4					x 2 =
5					x 3 =
		= Total C			x 4 =
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species	x 5 =
1. Tanacetum vulgare	30	<u>Y</u>	NI	Column Totals:	
2. Festuca rubra	<u>30</u>	<u>Y</u>	FAC		
3. Musci spp.	30				= B/A =
4				Hydrophytic Vegetation	
5				☐ 1 - Rapid Test for Hy	
6				2 - Dominance Test	
7				3 - Prevalence Index	
8					aptations <sup>1</sup> (Provide supporting or on a separate sheet)
9				5 - Wetland Non-Vas	•
10					vytic Vegetation <sup>1</sup> (Explain)
11					and wetland hydrology must
Woody Vine Stratum (Plot size: 3m)	90	= Total C	over	be present, unless distur	
1 2				Hydrophytic	
£	0	= Total C		Vegetation Present? Yes	□ No ⊠
% Bare Ground in Herb Stratum 10	<u>u</u>			100	
Remarks:				•	

		to the de	pth needed to docur			or confirm	n the ab	sence of	indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	ro	Remarks
					1900				Remarko
<u>0-10</u>	<u>2.5Y 5/3</u>	100					<u>gr. s. i</u>	oam	
10-20	<u>2.5Y 5/2</u>	100					loamy	sand	
								<u> </u>	
<sup>1</sup> Tvpe: C=C	oncentration. D=Der	oletion. RM	1=Reduced Matrix, CS	S=Covered	or Coate	ed Sand Gr	ains.	<sup>2</sup> Locat	ion: PL=Pore Lining, M=Matrix.
			I LRRs, unless othe						for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (S	65)				] 2 cm M	luck (A10)
Histic Ep	pipedon (A2)		Stripped Matrix						arent Material (TF2)
Black Hi	stic (A3)		Loamy Mucky M	lineral (F1)	(except	MLRA 1)		] Very SI	hallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed I					] Other (	Explain in Remarks)
•	d Below Dark Surfac	e (A11)	Depleted Matrix	. ,			3.		
	ark Surface (A12)		Redox Dark Su	. ,			٦		of hydrophytic vegetation and
	Aucky Mineral (S1) Gleyed Matrix (S4)		<ul> <li>Depleted Dark S</li> <li>Redox Depress</li> </ul>	•	)				hydrology must be present, disturbed or problematic.
	Layer (if present):			10115 (FO)				uniess (	
Type:	Layer (in present).								
· · _	abaa):		-				Llyda	ie Seil Pr	resent? Yes 🗌 No 🖂
	iches):		-				пуа		resent? Yes 🗌 No 🛛
Remarks:									
HYDROLO	GY								
Wetland Hv	drology Indicators								
			ed; check all that appl	V)				Seconda	ary Indicators (2 or more required)
Surface	· · · · · · · · · · · · · · · · · · ·	<u></u>	□ Water-Stai		s (BQ) ( <b>a</b> )	vcent MI R	Δ		er-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)			A, and 4B)		Keept MEN			IA, and 4B)
	. ,		□ Salt Crust						nage Patterns (B10)
	larks (B1)		Aquatic Inv	· /	(B13)				Season Water Table (C2)
	nt Deposits (B2)		Hydrogen		` '			-	ration Visible on Aerial Imagery (C9)
	posits (B3)					Livina Root	ts (C3)		morphic Position (D2)
	at or Crust (B4)				-	-			low Aquitard (D3)
	oosits (B5)		Recent Iro				)		-Neutral Test (D5)
	Soil Cracks (B6)		Stunted or						ed Ant Mounds (D6) (LRR A)
				2.000001		., (,			

Inundation Visible on Aeri	al Imagery	(B7)	☐ Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Conc	ave Surfac	e (B8)		
Field Observations:				
Surface Water Present?	Yes 🗌	No 🖂	Depth (inches):	
Water Table Present?	Yes 🗌	No 🖂	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🛛	Depth (inches):	Wetland Hydrology Present? Yes 🔲 No 🛛
Describe Recorded Data (stre	am gauge	, monitor	ing well, aerial photos, previous inspec	tions), if available:
Remarks:				
(includes capillary fringe) Describe Recorded Data (stre			· · · · · · · · · · · · · · · · · · ·	

Project/Site: City of Seattle Meyers Way Remainder Property Ci	ity/County: Seattle	Sampling Date:05/03/2011
Applicant/Owner: City of Seattle	State: WA	_ Sampling Point: <u>UPL-3</u>
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S6, T23</u>	M, 4EWM
Landform (hillslope, terrace, etc.): hillslope	Local relief (concave, convex, none): <u>convex</u>	Slope (%): <u>2</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.	52 Long: <u>122.20.15</u>	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI classific	ation: <u>Upland</u>
Are climatic / hydrologic conditions on the site typical for this time of year	? Yes 🔲 No 🛛 (If no, explain in Remarks.	)
Are Vegetation, Soil, or Hydrology significantly distu	irbed? Are "Normal Circumstances" pre	sent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally problema	atic? (If needed, explain any answers i	n Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	ampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □ Hydric Soil Present? Yes ⊠ No □	Is the Sampled Area	

Wetland Hydrology Present?	Yes 🗌 No 🖾	within a Wetland?	Yes 📋 No 🖂
Remarks: March and April 2011 have be additional inches of precipitation during			onths combined. This amounts to 4.42 e areas of puddling water on the surface.
No recent disturbance. Area of sample trees.	plot was previously mined prior b	out appears to have been reclaim	ed more than 40 years ago based on size of

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: 5m)	% Cover	Species?	Status	Number of Dominant Species	
1. <u>Alnus rubra</u>	60	<u>Y</u>	FAC	That Are OBL, FACW, or FAC: 5	(A)
2. Populus balsamifera	20	<u>Y</u>	FAC	Total Number of Dominant	
3					(B)
4				Demonstrat Demoissant On a size	
	80	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (	A/R)
Sapling/Shrub Stratum (Plot size: 3m)					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1. Rubus armeniacus	30	Y	FACU	Prevalence Index worksheet:	
2. Alnus rubra	20	Y	FAC	Total % Cover of: Multiply by:	_
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	_
	50			FACU species x 4 =	_
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	_
1. Ranunculus repens	20	<u>Y</u>	FACW	Column Totals: (A)	
2. Festuca rubra	20	<u>Y</u>	FAC		,
3. Tanacetum vulgare	10	N	NI	Prevalence Index = B/A =	
4. <u>Poa palustris</u>	10	N	FAC	Hydrophytic Vegetation Indicators:	
5. Holcus lanatus	10	N	FAC	1 - Rapid Test for Hydrophytic Vegetation	
6. Geranium robertianum	10	Ν	UPL	□ 2 - Dominance Test is >50%	
7. Taraxacum officinale	5	N	FACU	□ 3 - Prevalence Index is $\leq 3.0^{1}$	
8. Epilobium ciliatum	5	N	FACW	4 - Morphological Adaptations <sup>1</sup> (Provide support	orting
9. Daucus carota	5	N	UPL	data in Remarks or on a separate sheet)	
10				5 - Wetland Non-Vascular Plants <sup>1</sup>	
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	
Woody Vine Stratum (Plot size: 3m)	<u>95</u>			<sup>1</sup> Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.	ust
1				Hydrophytic	
2	0	= Total C		Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum 5	0				
Remarks:				1	

Sampling	Point.	I IPI -3
Sampling	FUIII.	UFL-J

	cription. (Descri		iepui ne		nem me	naioatoi	or commit	the abs	ence of indicators.)
Depth	Matrix				x Feature		. 2		
(inches)	Color (moist)	%	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
<u>0-6</u>	<u>10YR 3/2</u>	<u>100</u>						laom	
<u>6-16</u>	<u>2.5Y 5/2</u>	95	<u>10YF</u>	R 4/4	5	<u>C</u>	M	<u>gr. s. loa</u>	am
<u>16-20+</u>	<u>2.5Y 5/2</u>	95	<u>10YF</u>	R 4/4	5	<u>C</u>	M	sandy lo	pam
<sup>1</sup> Type: C=C	oncentration, D=D	epletion, F	RM=Red	uced Matrix, CS	S=Covere	d or Coat	ed Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (App								licators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (S	65)				2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix					Red Parent Material (TF2)
Black Hi				.oamy Mucky N	, /lineral (F1	) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)			oamy Gleyed I					Other (Explain in Remarks)
Depleted	d Below Dark Surf	ace (A11)		Depleted Matrix	(F3)				
Thick Date	ark Surface (A12)		🗌 F	Redox Dark Sur	face (F6)			<sup>3</sup> In	dicators of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)			Depleted Dark S	Surface (F	7)			wetland hydrology must be present,
	Bleyed Matrix (S4)		🗌 F	Redox Depress	ions (F8)			_	unless disturbed or problematic.
Restrictive	Layer (if present)	):							
Туре:									
Depth (in	iches):							Hydrid	: Soil Present? Yes 🛛 No 🗌
Remarks:								1	
HYDROLO	GY								
	OGY drology Indicato	rs:							
-			ired; che	eck all that appl	v)				Secondary Indicators (2 or more required)
Wetland Hy Primary Indi	rdrology Indicato					es (B9) (e	xcept MLR/		Secondary Indicators (2 or more required)
Wetland Hy Primary Indi Surface	cators (minimum o Water (A1)			□ Water-Stai	ned Leave		xcept MLR/		Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa	rdrology Indicato cators (minimum c Water (A1) ater Table (A2)			Water-Stai	ned Leave A, and 4B		xcept MLR	Α	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi Surface High Wa Saturatio	rdrology Indicato cators (minimum c Water (A1) ater Table (A2) on (A3)			□ Water-Stai 1, 2, 4/ □ Salt Crust	ned Leave <b>A, and 4B</b> (B11)	)	xcept MLR/	Α	<ul> <li>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</li> <li>Drainage Patterns (B10)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatic Water M	rdrology Indicato cators (minimum c Water (A1) ater Table (A2) on (A3) larks (B1)			□ Water-Stai <b>1, 2, 4/</b> □ Salt Crust □ Aquatic Inv	ned Leave <b>A, and 4B</b> (B11) /ertebrates	<b>)</b> s (B13)	xcept MLR/	A	<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> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)			<ul> <li>Water-Stai</li> <li>1, 2, 4J</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> </ul>	ned Leave A, and 4B (B11) /ertebrate Sulfide Oc	<b>)</b> s (B13) lor (C1)		A	<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 Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)			Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized F	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphei	<b>)</b> s (B13) lor (C1) res along	Living Roots	<b>A</b> s (C3)	<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 Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)			<ul> <li>Water-Stai</li> <li>1, 2, 4J</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized F</li> <li>Presence of</li> </ul>	ned Leave A, and 4B (B11) vertebrate Sulfide Oc Rhizospher of Reduce	<b>)</b> lor (C1) res along d Iron (C4	Living Roots	<b>A</b> s (C3)	<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 Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Algal Ma Iron Dep	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)			<ul> <li>Water-Stai</li> <li>1, 2, 4J</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iro</li> </ul>	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce n Reductio	) lor (C1) res along d Iron (C4 on in Tille	Living Roots }) d Soils (C6)	<b>A</b> s (C3)	<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>
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	drology Indicato cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	of one requ		Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots }) d Soils (C6)	<b>A</b> s (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Deg Algal Ma Iron Dep Surface Inundatio	drology Indicato cators (minimum 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 Aeria	of one requ	(B7)	<ul> <li>Water-Stai</li> <li>1, 2, 4J</li> <li>Salt Crust</li> <li>Aquatic Inv</li> <li>Hydrogen</li> <li>Oxidized R</li> <li>Presence of</li> <li>Recent Iro</li> </ul>	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots }) d Soils (C6)	<b>A</b> s (C3)	<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>
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Algal Ma Iron Dep Surface Inundatio Sparsely	drology Indicato cators (minimum 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 Aeria y Vegetated Conca	of one requ	(B7)	Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed	) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots }) d Soils (C6)	<b>A</b> s (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Algal Ma Iron Dep Surface Inundatic Sparsely Field Obser	drology Indicato cators (minimum 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 Aeria y Vegetated Conca	of one requ al Imagery ave Surface	(B7) e (B8)	Water-Stai 1, 2, 4J Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Shizospher of Reduce n Reductio Stressed Iain in Re	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roots }) d Soils (C6)	<b>A</b> s (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Obser Surface Wat	drology Indicato cators (minimum 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 Aeria y Vegetated Conca rvations: ter Present?	of one requ al Imagery ∩ ave Surface Yes □	(B7) ∋ (B8) No ⊠	Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp Depth (inchest	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed plain in Re	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roots }) d Soils (C6)	<b>A</b> s (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Orift Dep Algal Ma Iron Dep Surface Inundatii Sparsely Field Obser Surface Water	drology Indicato cators (minimum 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 Aeria y Vegetated Conca rvations: ter Present?	al Imagery ave Surface Yes Yes	(B7) ∋ (B8) No ⊠ No ⊠	Water-Stai 1, 2, 4J Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp Depth (inchest	A, and 4B (B11) vertebrate: Sulfide Oc Shizospher of Reduce n Reduction Stressed olain in Re	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roots	<b>A</b> s (C3)	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> <li>Frost-Heave Hummocks (D7)</li> </ul>
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Obser Surface Wate Water Table Saturation P (includes ca	drology Indicato cators (minimum 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 Aeria y Vegetated Conca rvations: ter Present? e Present? pillary fringe)	al Imagery ( ave Surface Yes Yes Yes Yes Yes	(B7) ∋ (B8) No ⊠ No ⊠ No ⊠	Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp Depth (inches Depth (inches	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed plain in Re s): s): s):	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roots ) d Soils (C6) 1) (LRR A) Wetla	A s (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Obser Surface Wate Water Table Saturation P (includes ca	drology Indicato cators (minimum 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 Aeria y Vegetated Conca vegetated C	al Imagery ( ave Surface Yes Yes Yes Yes Yes	(B7) ∋ (B8) No ⊠ No ⊠ No ⊠	Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp Depth (inches Depth (inches	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed plain in Re s): s): s):	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roots ) d Soils (C6) 1) (LRR A) Wetla	A s (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Critic Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Table Saturation P (includes ca Describe Ref	drology Indicato cators (minimum 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 Aeria y Vegetated Conca rvations: ter Present? e Present? pillary fringe)	al Imagery ( ave Surface Yes Yes Yes Yes Yes	(B7) ∋ (B8) No ⊠ No ⊠ No ⊠	Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp Depth (inches Depth (inches	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed plain in Re s): s): s):	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roots ) d Soils (C6) 1) (LRR A) Wetla	A s (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Obser Surface Wate Water Table Saturation P (includes ca	drology Indicato cators (minimum 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 Aeria y Vegetated Conca rvations: ter Present? e Present? pillary fringe)	al Imagery ( ave Surface Yes Yes Yes Yes Yes	(B7) ∋ (B8) No ⊠ No ⊠ No ⊠	Water-Stai 1, 2, 4/ Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp Depth (inches Depth (inches	ned Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reduction Stressed plain in Re s): s): s):	) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roots ) d Soils (C6) 1) (LRR A) Wetla	A s (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         □ Drainage Patterns (B10)         □ Dry-Season Water Table (C2)         □ Saturation Visible on Aerial Imagery (C9)         □ Geomorphic Position (D2)         □ Shallow Aquitard (D3)         □ FAC-Neutral Test (D5)         □ Raised Ant Mounds (D6) (LRR A)         □ Frost-Heave Hummocks (D7)

Project/Site: City of Seattle Meyers Way Remainder Property C	ity/County: Seattle Sampling Date	e: <u>05/03/2011</u>					
Applicant/Owner: City of Seattle	State: WA Sampling Poir	nt: <u>UPL-4</u>					
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S6, T23N, R4EWM</u>						
Landform (hillslope, terrace, etc.): hillslope	Local relief (concave, convex, none): concave S	lope (%): <u>1</u>					
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.	52 Long: <u>122.20.09</u> Dat	tum: <u>unknown</u>					
Soil Map Unit Name: NRCS Soil Unit is Unavailable	Soil Map Unit Name: NRCS Soil Unit is Unavailable NWI classification: Upland						
Are climatic / hydrologic conditions on the site typical for this time of year	? Yes 🔲 No 🖾 (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hydrology significantly distu	urbed? Are "Normal Circumstances" present? Yes ⊠	No 🗌					
Are Vegetation, Soil, or Hydrology naturally problem	atic? (If needed, explain any answers in Remarks.)						
SUMMARY OF FINDINGS – Attach site map showing s	ampling point locations, transects, important f	features, etc.					
Hydrophytic Vegetation Present?       Yes □       No ⊠         Hydric Soil Present?       Yes □       No ⊠         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland? Yes 🗌 No 🛛						

Remarks: March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface. No recent disturbance. Area of sample plot was previously mined prior but appears to have been reclaimed more than 40 years ago based on size of trees.

	Absolute			Dominance Test worksheet:	
Tree Stratum (Plot size: 5m)	% Cover	Species?	Status	Number of Dominant Species	
1. Populus balsamifera	70	<u>Y</u>	FAC	That Are OBL, FACW, or FAC: <u>1</u>	(A)
2				Total Number of Dominant	
3		. <u> </u>			(B)
4				Demonst of Deminerat Creation	
	70	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: 25	(A/B)
Sapling/Shrub Stratum (Plot size: 3m)					(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1. Oemlaria cerasiformis	<u>15</u>	<u>Y</u>	FACU	Prevalence Index worksheet:	
2. Rubus armeniacus	5	Y	FACU	Total % Cover of: Multiply by:	
3. Rubus ursinus	5	Y	FACU	OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: 1.5m)				UPL species x 5 =	
1. Musci spp.	60	Y	NI	Column Totals: (A)	
2. Geum macrophyllum	2	N	FACW		_ (2)
3. Equisetum arvense		N	FAC	Prevalence Index = B/A =	
4. Geranium robertianum				Hydrophytic Vegetation Indicators:	
5				□ 1 - Rapid Test for Hydrophytic Vegetation	
6				☐ 2 - Dominance Test is >50%	
				□ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7				☐ 4 - Morphological Adaptations <sup>1</sup> (Provide sup	portina
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> (Explai	in)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology	
Woody Vine Stratum (Plot size: 3m)	<u>64</u>	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 35	0	= Total C	over	Present? Yes 🗌 No 🛛	
Remarks:					
nonano.					

Profile Dese	cription: (Describ	e to the	depth n	eeded to doc	ument the in	ndicator	or confirm	n the at	osence	of indicators.)
Depth	Matrix				lox Features	<b>3</b> 1	. 2			
(inches)	Color (moist)	%		or (moist)	%	Type <sup>1</sup>	Loc	Textu	re	Remarks
<u>0-8</u>	<u>10YR 2/2</u>	<u>100</u>						<u>sandy</u>	loam	
8-18+	<u>2.5Y4/2</u>	100						<u>gr. s. l</u>	oam	
	oncentration, D=De						d Sand G			ation: PL=Pore Lining, M=Matrix.
-	Indicators: (Appl	icable to				ed.)				rs for Problematic Hydric Soils <sup>3</sup> :
	· /			Sandy Redox				_	_	Muck (A10)
Histic Ep     Black Hi	pipedon (A2)			Stripped Matri Loamy Mucky	• •	(oxeent)				Parent Material (TF2) Shallow Dark Surface (TF12)
	en Sulfide (A4)			Loamy Gleyed		• • •			-	r (Explain in Remarks)
	d Below Dark Surfa	ce (A11)		Depleted Matr				L		
•	ark Surface (A12)	. ,		Redox Dark S	urface (F6)			3	Indicato	rs of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark	•	7)				nd hydrology must be present,
•	Bleyed Matrix (S4)			Redox Depres	sions (F8)			-	unles	s disturbed or problematic.
	Layer (if present):									
								I		
	iches):							Hydi	ric Soil	Present? Yes 🗌 No 🛛
Remarks:										
HYDROLO										
-	drology Indicator									
	cators (minimum of	one req	uired; ch							ndary Indicators (2 or more required)
Surface	( )			U Water-St			cept MLI	RA	L W	ater-Stained Leaves (B9) (MLRA 1, 2,
-	ater Table (A2)				4A, and 4B)					4A, and 4B)
				Salt Crus	. ,	(D12)				rainage Patterns (B10)
Water M	. ,			Aquatic I	Sulfide Od	. ,				y-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
	nt Deposits (B2) posits (B3)			• •	Rhizosphere	. ,	iving Roc	ote (C3)		eomorphic Position (D2)
	at or Crust (B4)				of Reduced	-	-	13 (00)	_	nallow Aquitard (D3)
	posits (B5)				on Reductio			5)		AC-Neutral Test (D5)
	Soil Cracks (B6)				or Stressed F		•	,		aised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	Imagery	(B7)		plain in Ren					ost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ve Surfac	ce (B8)	•						
Field Obser	vations:									
Surface Wat	ter Present?	Yes 🗌	No 🛛	Depth (inche	es):					
Water Table	Present?	Yes 🗌	No 🛛	Depth (inche	es):					
Saturation P	Present?	Yes 🗌	No 🛛	Depth (inche	es):		Wet	land Hy	drolog	y Present? Yes 🗌 No 🖂

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

Remarks:

(includes capillary fringe)

Project/Site: City of Seattle Meyers Way Remainder Proper	ty	City/C	county: <u>Seattle</u>		Sampling Date:05/03/2011
Applicant/Owner: <u>City of Seattle</u>				State: WA	Sampling Point: UPL-5
Investigator(s): E. Pritchard, J. Merriman, C. Wright			Section, T	ownship, Range: <u>S6, T2</u>	3N, R4EWM
Landform (hillslope, terrace, etc.): depression		Loca	I relief (concave	, convex, none): <u>concav</u>	e Slope (%): <u>1</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)					
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>					
Are climatic / hydrologic conditions on the site typical for thi					
Are Vegetation, Soil, or Hydrology significantly					
Are Vegetation, Soil, or Hydrology natu	irally proble	matic	(If need	ed, explain any answers	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	sam	pling point l	ocations, transect	s, important features, etc
Hydrophytic Vegetation Present? Yes 🛛 No 🗌					
Hydric Soil Present? Yes ⊠ No □			Is the Sampled		
Wetland Hydrology Present? Yes 🗌 No 🖂			within a Wetla	nd? Yes 🛛	No 🗋
Remarks: March and April 2011 have been unseasonably					
additional inches of precipitation during March and April.			-	•	
No recent disturbance. Mining operations ended in 2002. facility that is part of the mine stormwater system.	Sample plo	ot is lo	cated at the wes	tern terminus of a 4-foot	deep stormwater conveyence
VEGETATION – Use scientific names of plan				1	
Tree Stratum (Plot size: 5m)			inant Indicator cies? Status	Dominance Test wo	
1. Alnus rubra			FAC	Number of Dominant That Are OBL, FACW	Species /, or FAC: <u>4</u> (A)
2					( )
3.				Total Number of Dom Species Across All St	
4					、 ,
			otal Cover	Percent of Dominant	Species /, or FAC: <u>80</u> (A/B)
Sapling/Shrub Stratum (Plot size: 3m)					
1. <u>Salix sitchensis</u>				Prevalence Index wo	
2. <u>Rubus armeniacus</u>					Multiply by:
3					x 1 =
4					x 2 = x 3 =
5				-	x 3 =
Herb Stratum (Plot size: <u>1.5m</u> )	<u> </u>		otal Cover		x 5 =
1. Phragmites australis	10	Y	FACW		(A) (B)
2. Cirsium arvense	5	Y	FACU		
3. Equisetum arvense	5	Y	FAC	Prevalence Inde	ex = B/A =
4				Hydrophytic Vegeta	
5				· ·	Hydrophytic Vegetation
6				2 - Dominance Te	
7				3 - Prevalence Inc	
8				data in Remar	Adaptations <sup>1</sup> (Provide supporting ks or on a separate sheet)
9				5 - Wetland Non-V	
10					ophytic Vegetation <sup>1</sup> (Explain)
11				<sup>1</sup> Indicators of hydric s	oil and wetland hydrology must
Woody Vine Stratum (Plot size: 3m)	<u>20</u>	= 10	otal Cover	be present, unless dis	sturbed or problematic.

<u>1 N UPL</u>

1 = Total Cover

\_\_\_\_\_

woody vine offatan	<u>i</u> (i iot bize. <u>i</u>
1. Hedera helix	

% Bare Ground in Herb Stratum 80

Remarks:

2.

Yes 🛛 No 🗌

Hydrophytic Vegetation

Present?

Profile Desc	cription: (Describe	e to the	depth n	eeded to docu	ment the i	ndicator	or confir	m the at	osence o	of indicators.)
Depth	Matrix				ox Features					
(inches)	Color (moist)	%	Colo	<i>(</i> , , , )	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re	Remarks
<u>0-7</u>	<u>2.5Y 4/2</u>	100						sandy	loam	
<u>7-15</u>	<u>2.5Y 5/2</u>	95	2.5	( 5/4	5	С	M	sandy	loam	
<u>15-20+</u>	<u>5Y 4/1</u>	100						loamy	sand	
<sup>1</sup> Type: C=C	oncentration, D=De	pletion,	RM=Rec	luced Matrix, C	S=Covered	l or Coat	ed Sand G	Grains.	<sup>2</sup> Loca	ation: PL=Pore Lining, M=Matrix.
	Indicators: (Appli									s for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (	S5)			Ľ	] 2 cm I	Muck (A10)
Histic Ep	oipedon (A2)			Stripped Matrix	• •				Red P	Parent Material (TF2)
Black Hi	( )			Loamy Mucky N	Mineral (F1	) (excep	t MLRA 1)		_ ,	Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamy Gleyed				Γ	] Other	(Explain in Remarks)
•	Below Dark Surfac	e (A11)		Depleted Matrix				2		
	ark Surface (A12)			Redox Dark Su	, ,			5		s of hydrophytic vegetation and
-	lucky Mineral (S1)			Depleted Dark	•	7)				d hydrology must be present,
-	Bleyed Matrix (S4)			Redox Depress	sions (F8)				unless	disturbed or problematic.
	Layer (if present):									
	ches):							Hydi	ric Soil F	Present? Yes 🛛 No 🗌
Remarks:										
HYDROLO										
-	drology Indicators									
Primary Indi	cators (minimum of	one requ	uired; ch							dary Indicators (2 or more required)
Surface	( )			Water-Sta			except ML	RA		ter-Stained Leaves (B9) (MLRA 1, 2,
-	iter Table (A2)			1, 2, 4	A, and 4B)	1				4A, and 4B)
Saturatio	on (A3)			Salt Crust	(B11)				🗌 Dra	iinage Patterns (B10)
Water M	arks (B1)			Aquatic In	vertebrates	s (B13)			🗌 Dry	-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydrogen	Sulfide Od	or (C1)			🗌 Sat	uration Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Oxidized F	Rhizospher	es along	Living Ro	ots (C3)	🗌 Geo	omorphic Position (D2)
🗌 Algal Ma	at or Crust (B4)			Presence	of Reduced	d Iron (C	4)		🗌 Sha	allow Aquitard (D3)
Iron Dep	oosits (B5)			Recent Iro	n Reductio	n in Tille	d Soils (C	6)	🗌 FAG	C-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted or	Stressed I	Plants (D	) (LRR A	<b>(</b> )	🗌 Rai	sed Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery	(B7)		olain in Rer				🗌 Fro	st-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surfac	e (B8)							
Field Obser			. ,							
Surface Wat		Yes 🗌	No 🖂	Depth (inche	s):					
Water Table		Yes 🖂		Depth (inches						

 Yes X
 No Depth (inches): 15
 Wetland Hydrology Present?
 Yes X
 No X

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

Remarks: Saturation and groundwater are below 12 inches.

Saturation Present?

Project/Site: City of Seattle Meyers Way Remainder Prope	erty	City/Count	y: <u>Seattle</u>		Sampling Date:05/04/2011
Applicant/Owner: <u>City of Seattle</u>				State: WA	Sampling Point: UPL-6
nvestigator(s): E. Pritchard, J. Merriman, C. Wright			Section, To	wnship, Range: <u>S32, T24</u>	N, R4EWM
_andform (hillslope, terrace, etc.): hillslope		Local reli	ef (concave	, convex, none): <u>convex</u>	Slope (%): <u>10</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: 47.3	1.04		Long: 122.20.02	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable					
Are climatic / hydrologic conditions on the site typical for th					
Are Vegetation, Soil, or Hydrology sig			·	ormal Circumstances" pres	ent? Yes 🕅 No 🗍
Are Vegetation, Soil, or Hydrology na				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes 🗌 No 🛛			51	,	
Hydric Soil Present? Yes ⊠ No □			ne Sampled	_	_
Wetland Hydrology Present? Yes 🗌 No 🛛		with	nin a Wetlar	nd? Yes 🗌 N	0 🛛
Remarks: March and April 2011 have been unseasonabl additional inches of precipitation during March and April.	y rainy with 1	69% of noi	mal rainfall	for the two months combir	ed. This amounts to 4.42
No recent disturbance to the area. Mining operations en	ded in 2002.	Soils are r	nixed from I	nistoric mining practices.	
VEGETATION – Use scientific names of pla	nts				
	Absolute	Dominant	Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 5m)	<u>% Cover</u>			Number of Dominant Sp	
1				That Are OBL, FACW, o	r FAC: <u>2</u> (A)
2				Total Number of Domina	ant
3				Species Across All Strat	a: <u>5</u> (B)
4				Percent of Dominant Sp	ecies
Sapling/Shrub Stratum (Plot size: 3m)	0	= Total C	Cover	That Are OBL, FACW, o	r FAC: <u>40</u> (A/B)
1. Populus balsamifera	10	Y	FAC	Prevalence Index work	sheet:
2. <u>Cytisus scoparius</u>				Total % Cover of:	Multiply by:
3. <u>Rubus armeniacus</u>					x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
	30	= Total C	Cover	FACU species	x 4 =
Herb Stratum (Plot size: <u>1.5m</u> )	40	V			x 5 =
1. Juncus effusus	<u>40</u>			Column Totals:	(A) (B)
2. <u>Hypericum perforatum</u>				Prevalence Index	= B/A =
3				Hydrophytic Vegetatio	
5				□ 1 - Rapid Test for Hy	
6				2 - Dominance Test	
7				3 - Prevalence Index	c is ≤3.0 <sup>1</sup>
8					laptations <sup>1</sup> (Provide supporting
9					or on a separate sheet)
10				5 - Wetland Non-Vas	scular Plants nytic Vegetation <sup>1</sup> (Explain)
11	<u> </u>				and wetland hydrology must
Manda Mina Chatana (Distained Ch	<u>65</u>	= Total C	Cover	be present, unless distu	
Woody Vine Stratum (Plot size: <u>3m</u> )	4	NI			
1. <u>Hedera helix</u>	·	<u>IN</u>	UPL	Hydrophytic	
2	1	= Total C	over	Vegetation Present? Yes	. □ No ⊠
% Bare Ground in Herb Stratum 20	<u> </u>	- 10tai C			
76 Bare Glound in Field Stratum <u>20</u>					

Profile Des	cription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirn	n the absence	e of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-11</u>	<u>2.5Y 5/2</u>	60					gr. I. f. sand	mixed matrix
<u>0-11</u>	<u>2.5Y 5/1</u>	40					gr. I. f. sand	mixed matrix
<u>11-17+</u>	<u>2.5Y 4/1</u>	100					<u>gr. s. loam</u>	very compacted
					·			
					·			
<sup>1</sup> Type: C=C	oncentration, D=De	oletion, RN	/I=Reduced Matrix, C	S=Covere	d or Coate	ed Sand G	rains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applie	cable to a	II LRRs, unless othe	rwise not	ed.)		Indicate	ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (	S5)			🗌 2 cn	n Muck (A10)
Histic Ep	oipedon (A2)		Stripped Matrix	(S6)			🗌 Red	Parent Material (TF2)
Black Hi	stic (A3)		Loamy Mucky N	lineral (F1	) (except	MLRA 1)	🗌 Ver	y Shallow Dark Surface (TF12)
Hydroge	n Sulfide (A4)		Loamy Gleyed	Matrix (F2	)		🗌 Oth	er (Explain in Remarks)
Depleted	Below Dark Surfac	e (A11)	Depleted Matrix	(F3)				
Thick Da	ark Surface (A12)		Redox Dark Su	face (F6)			<sup>3</sup> Indicate	ors of hydrophytic vegetation and
Sandy N	lucky Mineral (S1)		Depleted Dark \$	Surface (F	7)		wetla	and hydrology must be present,
Sandy G	leyed Matrix (S4)		Redox Depress	ions (F8)			unles	ss disturbed or problematic.
Restrictive	Layer (if present):							
Туре:			_					
	ches):		_				Hydric Soi	l Present? Yes 🛛 No 🗌
Remarks: Si	urface soils appear t	o be mixe	d from historic mining	practices				

# HYDROLOGY

Wetland Hydrology Indicato	rs:					
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more require						
Surface Water (A1) Water-Stained Leaves (B9) (exception) (B)					Water-Stained Leaves (B9) (MLRA 1, 2,	
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)	
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)	
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)	
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3)			☑ Oxidized Rhizospheres along Livin	ng Roots (C3)	Geomorphic Position (D2)	
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)	
Iron Deposits (B5)			Recent Iron Reduction in Tilled So	ils (C6)	FAC-Neutral Test (D5)	
Surface Soil Cracks (B6)     Stunted or Stressed Plan				.RR A)	Raised Ant Mounds (D6) (LRR A)	
Inundation Visible on Aeria	al Imagery	(B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)	
Sparsely Vegetated Conca	ave Surfac	e (B8)				
Field Observations:						
Surface Water Present?	Yes 🗌	No 🖂	Depth (inches):			
Water Table Present?	Yes 🗌	No 🖂	Depth (inches):			
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🛛	Depth (inches):	Wetland Hy	drology Present? Yes 🗌 No 🛛	
Describe Recorded Data (stre	am gauge	, monito	ing well, aerial photos, previous inspec	tions), if availa	able:	
	ofessiona				ally wetter conditions resulting from above res occur within the soil profile to be sufficient	

Project/Site: City of Seattle Meyers Way Remainder Property	City/County: Seattle		Sampling Date:05/04/2011
Applicant/Owner: City of Seattle		State: WA	Sampling Point: UPL-7
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Tow	nship, Range: <u>S5, T23N,</u>	R4EWM
Landform (hillslope, terrace, etc.): flat	Local relief (concave, c	onvex, none): <u>none</u>	Slope (%): <u>0</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47	′.30.60	Long: <u>122.20.01</u>	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable		NWI classificati	on: <u>upland</u>
Are climatic / hydrologic conditions on the site typical for this time of y	/ear? Yes 🗌 No 🛛 (If r	no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly of	disturbed? Are "Nor	mal Circumstances" prese	ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally prob	elematic? (If needed	I, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	g sampling point lo	cations, transects,	important features, etc.

Hydrophytic Vegetation Present?	Yes 📋 No 🖂	Is the Sampled Area	
Hydric Soil Present?	Yes 🔲 No 🖾	within a Wetland?	Yes 🗍 No 🕅
Wetland Hydrology Present?	Yes 🗌 No 🖾	within a wettand?	
Remarks: March and April 2011 have be	een unseasonably rainy with 169%	o of normal rainfall for the two me	onths combined. This amounts to 4.42

additional inches of precipitation during March and April. Site conditions are very wet as a result of recent rainfal and there are large puddles in the vicinity of the sample plot.

No recent disturbance to the area. Mining operations ended in 2002. Soils are mixed from historic mining practices.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2				Total Number of Dominant	
3			<u> </u>	Species Across All Strata: <u>5</u>	(B)
4				Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 3m)	0	= Total C	over	That Are OBL, FACW, or FAC: 40	(A/B)
1. Populus balsamifera	10	Y	FAC	Prevalence Index worksheet:	
2. <u>Cytisus scoparius</u>		Y		Total % Cover of:Multiply by:	
3. Rubus armeniacus				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	
1. Agrostis capillaris	<u>40</u>	<u>Y</u>	FAC	Column Totals: (A)	(B)
2. Hypericum perforatum	<u>25</u>	<u>Y</u>	UPL		
3. Holcus lanatus	<u>15</u>	N	FAC	Prevalence Index = B/A =	
4. Plantango lanceolata	10	<u>N</u>	FAC	Hydrophytic Vegetation Indicators:	
5. Geum macrophyllum	1	<u>N</u>	FACW	1 - Rapid Test for Hydrophytic Vegetation	
6. Taraxacum officinale	1	N	FACU	□ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^1$	
8				<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide sup data in Remarks or on a separate sheet)</li> </ul>	
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	in)
11 <u>Woody Vine Stratum</u> (Plot size: <u>3m</u> )	92			<sup>1</sup> Indicators of hydric soil and wetland hydrology r be present, unless disturbed or problematic.	must
1					
2				Hydrophytic Vegetation	
	0	= Total C	over	Present? Yes 🗌 No 🖂	
% Bare Ground in Herb Stratum <u>5</u>					
Remarks:					

Profile Des	cription: (Describ	e to the d	epth needed to docur	nent the i	ndicator	or confiri	m the absence of indicators.)		
Depth	Matrix		Redo	x Features			_		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks		
<u>0-15</u>	<u>2.5Y 4/2</u>	65					loam		
<u>0-15</u>	<u>2.5Y 4/1</u>	45	<u>.</u>				loam		
<u>15-20+</u>	<u>2.5Y 4/2</u>	100					I. f. sand		
			<u> </u>						
			<u> </u>						
			<u> </u>						
		•	M=Reduced Matrix, CS			ed Sand G			
•		cable to a	all LRRs, unless other		ed.)		Indicators for Problematic Hydric Soils <sup>3</sup> :		
Histosol	( )		Sandy Redox (S	,			2 cm Muck (A10)		
Histic E	oipedon (A2)		Stripped Matrix	(S6)			Red Parent Material (TF2)		
Black Hi	stic (A3)		Loamy Mucky N	lineral (F1	) (except	MLRA 1)	) Very Shallow Dark Surface (TF12)		
Hydroge	en Sulfide (A4)		Loamy Gleyed Matrix (F2)				Other (Explain in Remarks)		
Deplete	d Below Dark Surfa	ce (A11)	Depleted Matrix (F3)						
Thick Da	ark Surface (A12)		Redox Dark Surface (F6)				<sup>3</sup> Indicators of hydrophytic vegetation and		
Sandy N	lucky Mineral (S1)		Depleted Dark S	Surface (F	7)		wetland hydrology must be present,		
Sandy G	Bleyed Matrix (S4)		Redox Depressi	ons (F8)			unless disturbed or problematic.		
	Layer (if present):								
Туре:									
	iches):						Hydric Soil Present? Yes 🗌 No 🛛		
Remarks: U	pper 15 inches app	ears to be	mixed. This is likely a	result of r	nining act	ivities.			
HYDROLC									
Wetland Hy	drology Indicators	s:							

Primary Indicators (minimum of one required; check all that apply)					Secondary Indicators (2 or more required)		
Surface Water (A1) Water-Stained Leaves (B9) (except MLRA					U Water-Stained Leaves (B9) (MLRA 1, 2,		
☐ High Water Table (A2) <b>1, 2, 4A, and 4B)</b>					4A, and 4B)		
Saturation (A3)					Drainage Patterns (B10)		
Water Marks (B1)			Dry-Season Water Table (C2)				
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)			☑ Oxidized Rhizospheres along Livin	ng Roots (C3)	Geomorphic Position (D2)		
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)		
Iron Deposits (B5)	□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6)			oils (C6)	FAC-Neutral Test (D5)		
Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (I	LRR A)	Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)				Frost-Heave Hummocks (D7)			
Sparsely Vegetated Conca	ve Surfac	e (B8)					
Field Observations:							
Surface Water Present?	Yes 🛛	No 🗌	Depth (inches): <u>1</u>				
Water Table Present?	Yes 🛛	No 🗌	Depth (inches): <u>18</u>				
Saturation Present? (includes capillary fringe)	Yes 🛛	No 🗌	Depth (inches): <u>17</u>	Wetland Hy	drology Present? Yes 🗌 No 🛛		
Describe Recorded Data (strea	am gauge	, monitor	ing well, aerial photos, previous inspec	tions), if availa	able:		
		•	•	ed approximate	ely 3 feet from the test pit. This appears to be		
, ,	surface water from recent rain and is not linked to groundwater. Oxidized rhyzospheres are within the upper 2 inches of the soil profile. Given the substantially wetter conditions resulting from above normal rainfall, it is our best professional judgement that the limited zone in which oxidized rhyzospheres occur within the soil profile is not sufficient indication of wetland hydrology.						

Project/Site: City of Seattle Meyers Way Remainder Property Cit	y/County: Seattle	Sampling Date:05/04/2011				
Applicant/Owner: City of Seattle	State: WA	Sampling Point: UPL-8				
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, T23N</u>	, R4EWM				
Landform (hillslope, terrace, etc.): flat L	Local relief (concave, convex, none): none Slope (%): 0					
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.5	58 Long: <u>122.219.58</u>	Datum: unknown				
Soil Map Unit Name: NRCS Soil Unit is Unavailable NWI classification: upland						
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 distur	bed? Are "Normal Circumstances" pres	ent? Yes 🛛 No 🗌				
Are Vegetation, Soil, or Hydrology naturally problema	tic? (If needed, explain any answers in	Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present?       Yes ☑       No □         Hydric Soil Present?       Yes □       No ☑         Wetland Hydrology Present?       Yes □       No ☑	Is the Sampled Area within a Wetland? Yes 🗌 N	D 🖂				

Remarks: March and April 2011 have been unseasonably rainy with 169%	
additional inches of precipitation during March and April. Site conditions a	re very wet as a result with large areas of puddling water on the surface
No recent disturbance. Mining operations ended in 2002. Soils are mixed	from historic mining practices. Puddles at surface appears to be result
recent rainfall.	

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 2	(B)
4 Sapling/Shrub Stratum (Plot size: <u>3m</u> )		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
1. Populus balsamifera	40	Y	FAC	Prevalence Index worksheet:	
2. Cytisus scoparius	5	N	UPL	Total % Cover of: Multiply by:	
3. Rubus armeniacus	1	N	FACU	OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	
1. <u>Musci spp.</u>	40	<u>Y</u>	NI	Column Totals: (A)	
2. Agrostis capillaris	30	<u>Y</u>	FAC		
3. Holcus lanatus	5	Ν	FAC	Prevalence Index = B/A =	
4. Plantango lanceolata	5	N	FAC	Hydrophytic Vegetation Indicators:	
5. Juncus effusus	5	N	FACW	□ 1 - Rapid Test for Hydrophytic Vegetation	
6. Tanacetum vulgare	5	N	NI	2 - Dominance Test is >50%	
7. <u>Hypochaeris radicata</u>	5	N	FACU	□ 3 - Prevalence Index is $\leq 3.0^1$	
8. <u>Carex spp.</u>				4 - Morphological Adaptations <sup>1</sup> (Provide sudata in Remarks or on a separate sheet)	oporting t)
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Expla	ain)
11 Woody Vine Stratum (Plot size: 3m)	96			<sup>1</sup> Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic.	must
1					
2				Hydrophytic Vegetation	
% Bare Ground in Herb Stratum <u>5</u>	0	= Total C	over	Present? Yes 🛛 No 🗌	
Remarks:					

Profile Desc	cription: (Describ	e to the d	lepth n	eeded to docur	nent the i	ndicator	or confi	irm the at	osence	of indicators.)
Depth	Matrix				x Features		2	_		
(inches)	Color (moist)	%	Col	or (moist)	%	Type'	Loc <sup>2</sup>	Textu	re	Remarks
0-8	<u>2.5Y 5/2</u>	100				. <u> </u>		loamy	sand	
<u>8-18+</u>	<u>2.5Y 4/2</u>	100						loam		
						·				
. <u> </u>										
<sup>1</sup> Type: C=C	oncentration, D=D	epletion, F	RM=Red	duced Matrix, CS	S=Covered	l or Coate	ed Sand	Grains.	<sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to	all LRF	s, unless other	rwise note	ed.)		h	ndicato	rs for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)			Sandy Redox (S	65)			Ľ	] 2 cm	Muck (A10)
	ipedon (A2)			Stripped Matrix	. ,					Parent Material (TF2)
Black Hi				Loamy Mucky N			MLRA	· _	-	Shallow Dark Surface (TF12)
	n Sulfide (A4)	<i></i>		Loamy Gleyed N				L	_ Othe	r (Explain in Remarks)
•	Below Dark Surfa	ice (A11)		Depleted Matrix	. ,			3	Indiaata	rs of hydrophytic vegetation and
	Irk Surface (A12) Iucky Mineral (S1)			Redox Dark Sur Depleted Dark S		7)		I		nd hydrology must be present,
•	leyed Matrix (S4)			Redox Depressi	•	)				s disturbed or problematic.
•	Layer (if present)	:			()					
	,									
	ches):							Hydi	ric Soil	Present? Yes 🗌 No 🖂
Remarks: .	,							-		
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
-	cators (minimum o		ired; ch	eck all that appl	y)				Secor	ndary Indicators (2 or more required)
Surface	Water (A1)			U Water-Stai	ned Leave	s (B9) ( <b>e</b> )	kcept M	LRA		ater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				A, and 4B)					4A, and 4B)
□ Saturatio	on (A3)			Salt Crust					🗌 Dr	ainage Patterns (B10)
U Water M	. ,			Aquatic Inv	` '	(B13)				y-Season Water Table (C2)
	t Deposits (B2)			Hydrogen S		. ,				aturation Visible on Aerial Imagery (C9)
	osits (B3)			Oxidized R			Living R	oots (C3)		eomorphic Position (D2)
	t or Crust (B4)			Presence o		-	-	. ,	Sr	nallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iror	n Reductio	n in Tilleo	d Soils (	C6)	🗆 FA	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted or	Stressed I	Plants (D	1) ( <b>LRR</b>	<b>A</b> )	🗌 Ra	aised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	I Imagery	(B7)	Other (Exp						ost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ve Surfac	e (B8)							
Field Obser	vations:									
Surface Wat	er Present?	Yes 🛛	No 🗌	Depth (inches	s): <u>1</u>					
Water Table	Present?	Yes 🗌	No 🗌	Depth (inches	s):					
Saturation P	resent?	Yes 🗌	No 🗌	Depth (inches	s):		W	etland Hy	drology	y Present? Yes 🗌 No 🖂
(includes ca								•) :6''		
Describe Re	corded Data (strea	im gauge,	monito	ring well, aerial p	pnotos, pre	evious ins	pections	s), it availa	able:	

Remarks: The upper 2 inches of the soil profile is saturated and a small puddle is located approximately 3 feet from the test pit. This appears to be surface water from recent rain and is not linked to groundwater. No water table observed within 18 inches of the surface.

Given the substantially wetter conditions resulting from above normal rainfall, it is our best professional judgement that the puddles do not indicate wetland hydrology because they are not linked to groundwater.

Project/Site: City of Seattle Meyers Way Remainder Property City	//County: Seattle Sampling Date:	05/04/2011					
Applicant/Owner: City of Seattle	State: WA Sampling Point:	UPL-9					
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, T23N, R4EWM</u>						
Landform (hillslope, terrace, etc.): flat Lc	cal relief (concave, convex, none): none Slope (%):						
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.59	9 Long: <u>122.20.03</u> Datu	m: <u>unknown</u>					
Soil Map Unit Name: NRCS Soil Unit is Unavailable NWI classification: upland							
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 disturb	ped? Are "Normal Circumstances" present? Yes ⊠ N	No 🗌					
Are Vegetation, Soil, or Hydrology naturally problemat	ic? (If needed, explain any answers in Remarks.)						
SUMMARY OF FINDINGS – Attach site map showing sa	SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present?       Yes □       No ⊠         Hydric Soil Present?       Yes □       No ⊠         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland? Yes ☐ No ⊠						

Remarks: No recent disturbance. Mining operations ended in 2002. Soils are mixed from historic mining practices. Puddles at surface appears to be result recent rainfall. March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with puddling water on the surface in tire ruts.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2				Total Number of Dominant	
3				Species Across All Strata: <u>5</u>	(B)
4				Percent of Dominant Species	
	0	= Total C	Cover	That Are OBL, FACW, or FAC: <u>40</u>	(A/B)
Sapling/Shrub Stratum (Plot size: 3m)					
1. Populus balsamifera		<u>Y</u>		Prevalence Index worksheet:	
2. <u>Cytisus scoparius</u>	10	<u>Y</u>	UPL	Total % Cover of: Multiply by:	
3. Rubus armeniacus	5	<u>Y</u>	FACU	OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	
1. Agrostis capillaris	40	Y	FAC	Column Totals: (A)	
2. Tanacetum vulgare	20	Y	NI	( )	_ ( )
3. Daucus carota	20	Y	UPL	Prevalence Index = B/A =	
4. Juncus effusus	3	N	FACW	Hydrophytic Vegetation Indicators:	
5. <u>Holcus lanatus</u>	1	N	FAC	1 - Rapid Test for Hydrophytic Vegetation	
6. <u>Plantango lanceolata</u>	1	N	FAC	2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^{1}$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide sup data in Remarks or on a separate sheet	
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Expla	in)
11				<sup>1</sup> Indicators of hydric soil and wetland hydrology	
Woody Vine Stratum (Plot size: 3m)	85	= Total C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 15	0	= Total C	over	Present? Yes 🗌 No 🛛	
Remarks:					
i tomunto.					

Profile Des	cription: (Describ	be to the d	epth needed to docu	ment the	indicator	or confir	m the absence of indicators.)			
Depth	Matrix			ox Feature		2	-			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks			
<u>0-8</u>	<u>2.5Y 4/2</u>	<u>50</u>					loam mixed matrix			
<u>0-8</u>	<u>2.5Y 5/2</u>	50	·				loam mixed matrix			
<u>8-15+</u>	<u>2.5Y 4/2</u>	100	·				I. f. sand compacted			
							· · · · · · · · · · _ /			
——										
<sup>1</sup> Type: C=C	Concentration, D=D	epletion, R	M=Reduced Matrix, C	S=Covere	d or Coate	ed Sand G	Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators: (App	licable to a	all LRRs, unless othe	rwise not	ed.)		Indicators for Problematic Hydric Soils <sup>3</sup> :			
Histoso	l (A1)		Sandy Redox (	S5)			2 cm Muck (A10)			
Histic E	pipedon (A2)		Stripped Matrix	(S6)			Red Parent Material (TF2)			
	istic (A3)		Loamy Mucky	Aineral (F	1) (except	MLRA 1)	1) Uery Shallow Dark Surface (TF12)			
	en Sulfide (A4)		Loamy Gleyed	•		,	Other (Explain in Remarks)			
	d Below Dark Surfa	ace (A11)	Depleted Matrix	•	,					
_ ·	ark Surface (A12)		Redox Dark Su	. ,			<sup>3</sup> Indicators of hydrophytic vegetation and			
	Mucky Mineral (S1)		Depleted Dark	,	7)		wetland hydrology must be present,			
-	Gleyed Matrix (S4)		Redox Depress	•	.,		unless disturbed or problematic.			
Restrictive	Layer (if present)	:	-							
Туре:			_							
Depth (ir	nches):		_				Hydric Soil Present? Yes 🗌 No 🛛			
Remarks: U	Ipper 8 inches appe	ears to be n	nixed. This is likely a	result of m	nining activ	rities.				
HYDROLO	DGY									
Wetland Hy	drology Indicator	s:								

Primary Indicators (minimum of one required; ch	neck all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	MLRA Uter-Stained Leaves (B9) (MLRA 1, 2,	
High Water Table (A2)	4A, and 4B)	
Saturation (A3)	☐ Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living	Roots (C3) 🔲 Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Tilled Soils	(C6) FAC-Neutral Test (D5)
Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (LR	R 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): <u>1</u>	
Water Table Present? Yes 🗌 No 🖂	Depth (inches):	
Saturation Present? Yes ☐ No ⊠ (includes capillary fringe)	Depth (inches):	Vetland Hydrology Present? Yes 🗌 No 🖂
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspectio	ns), if available:
		hydrology criteria. Water is present at the surface to depth
	urrace water from recent rain and is not lir	ked to groundwater. No water table observed within 15
		ked to groundwater. No water table observed within 15

Project/Site: City of Seattle Meyers Way Remainder Property	_City/County: <u>Seattle</u>	!	Sampling Date:05/04/2011			
Applicant/Owner: City of Seattle	State	e: <u>WA</u>	Sampling Point: <u>UPL-10</u>			
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township,	Range: <u>S6, T23N,</u>	R4EWM			
Landform (hillslope, terrace, etc.): flat	Local relief (concave, convex,	al relief (concave, convex, none): none Slope (%)				
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.	30.60 Long:	122.20.07	Datum: unknown			
Soil Map Unit Name: NRCS Soil Unit is Unavailable		NWI classification	on: upland			
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 🗌 No 🛛 (If no, exp	ain in Remarks.)				
Are Vegetation, Soil, or Hydrology significantly d	isturbed? Are "Normal Cir	cumstances" prese	ent? Yes 🛛 No 🗌			
Are Vegetation, Soil, or Hydrology naturally probl	ematic? (If needed, expla	c? (If needed, explain any answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing	g sampling point location	ns, transects, i	important features, etc.			
Hydrophytic Vegetation Present?       Yes ⊠       No □         Hydric Soil Present?       Yes ⊠       No □         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland?	Yes 🗌 No				
Remarks: No recent disturbance Mining operations ended in 2002	Soils are mixed from historic mit	ning practices Pug	ddles at surface annears to be			

result recent disturbance. Mining operations ended in 2002. Soils are mixed from historic mining practices. Puddles at surface appears to be result recent rainfall. March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface in tire ruts.

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

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	)
2				Total Number of Dominant	
3				Species Across All Strata: 1 (B)	
4				、	
	0			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/I	D)
Sapling/Shrub Stratum (Plot size: 3m)	-			$\frac{100}{100}$	5)
1. Populus balsamifera	5	<u>N</u>	FAC	Prevalence Index worksheet:	
2. Cytisus scoparius	<u>1</u>	N	UPL	Total % Cover of: Multiply by:	
3				OBL species <u>0</u> x 1 = <u>0</u>	
4				FACW species $0$ x 2 = $0$	
5				FAC species <u>96</u> x 3 = <u>288</u>	
		= Total C		FACU species <u>0</u> x 4 = <u>0</u>	
Herb Stratum (Plot size: 1.5m)				UPL species <u>11</u> x 5 = <u>55</u>	
1. Agrostis capillaris	75	<u>Y</u>	FAC	Column Totals: 107 (A) 343 (I	B)
2. Cardimine oligosperma	5	<u>N</u>	FAC		,
3. Daucus carota	5	<u>N</u>	UPL	Prevalence Index = $B/A = 3.2$	
4. <u>Vicia sativa</u>	5	N	UPL	Hydrophytic Vegetation Indicators:	
5. Plantango lanceolata	5	N	FAC	1 - Rapid Test for Hydrophytic Vegetation	
6. <u>Holcus lanatus</u>	1	N	FAC	□ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^{1}$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide supporti data in Remarks or on a separate sheet)	ing
9		·		$\Box$ 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 mus	+
Woody Vine Stratum (Plot size: 3m)	<u>96</u>	= Total C	over	be present, unless disturbed or problematic.	l
1					
2				Hydrophytic	
E	0	= Total C	over	Vegetation Present? Yes □ No ⊠	
% Bare Ground in Herb Stratum 5	<u>.</u>		0.00		

Remarks: Area is dominated by a single non-native, disturbance adapted, facultative species. Therefore, we used the prevalence index to determine that the area does not meet the hydrophytic vegetation criteria.

Profile Desc	cription: (Describe	to the de	pth needed to docu	ment the i	ndicato	or confiri	m the absence	e of indicators.)
Depth	Matrix		Redo	ox Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-6</u>	<u>2.5Y 5/1</u>	95	<u>2.5Y 5/4</u>	5	С	M	loamy sand	Soils appear disturbed by grading
<u>6-18+</u>	<u>2.5Y 4/2</u>	100					I. f. sand	
		·			• •			
					• •			
					• •			
<sup>1</sup> Type: C=C	oncentration, D=Dep	oletion, RN	/=Reduced Matrix, C	S=Covere	d or Coat	ed Sand G	Grains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to a	II LRRs, unless othe	rwise not	ed.)		Indicate	ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (	S5)			🗌 2 cn	n Muck (A10)
🔲 Histic Ep	pipedon (A2)		Stripped Matrix				🗌 Red	Parent Material (TF2)
Black Hi	stic (A3)		Loamy Mucky M	/lineral (F1	) (excep	t MLRA 1)	🗌 Ver	y Shallow Dark Surface (TF12)
Hydroge	n Sulfide (A4)		Loamy Gleyed			,		er (Explain in Remarks)
	Below Dark Surfac	e (A11)	Depleted Matrix	•	, ,			
	irk Surface (A12)	• (, )	Redox Dark Su	. ,			<sup>3</sup> Indicate	ors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark	• •	7)			and hydrology must be present,
-	leyed Matrix (S4)		Redox Depress	•	')			ss disturbed or problematic.
-	Layer (if present):							
			_					
• •	ches):		_				Hydric Soi	l Present? Yes 🛛 No 🗌
Remarks: Sa	andy soils.							
HYDROLO	GY							
Wetland Hy	drology Indicators:	:						
-			ed; check all that app	ly)			Seco	ndary Indicators (2 or more required)

Primary Indicators (minimum	of one req	uired; ch	eck all that apply)		Secondary Indicators (2 or more required)
Surface Water (A1)			□ Water-Stained Leaves (B9) (exce	pt MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizospheres along Livi	ng Roots (C3)	Geomorphic Position (D2)
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)
Iron Deposits (B5)			Recent Iron Reduction in Tilled Se	oils (C6)	FAC-Neutral Test (D5)
Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (	LRR A)	Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aeria	al Imagery	′ (B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)
Sparsely Vegetated Conce	ave Surfac	ce (B8)			
Field Observations:					
Surface Water Present?	Yes 🛛	No 🗌	Depth (inches): <u>1</u>		
Water Table Present?	Yes 🗌	No 🖂	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🛛	Depth (inches):	Wetland Hy	rdrology Present? Yes 🗌 No 🛛
Describe Recorded Data (stre	am gauge	, monito	ring well, aerial photos, previous inspe	ctions), if availa	able:
					criteria. Water is present at the surface to depth
of 1 inch within tire ruts, but th inches of the surface.	is appears	s to be si	urface water from recent rain and is no	t linked to grou	indwater. No water table observed within 18
inches of the surface.					

Project/Site: City of Seattle Meyers Way Remainder Property	City/County: <u>S</u>	eattle	Samplir	ng Date:05/04/2011		
Applicant/Owner: City of Seattle		State: W/	A Samplir	ng Point: <u>UPL-11</u>		
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Se	ction, Township, Rang	ge: <u>S6, T23N, R4EW</u>	Л		
Landform (hillslope, terrace, etc.): flat	Local relief (c	al relief (concave, convex, none): none Slope (%): 0				
Subregion (LRR): Northwest Forests and Coasts (LRR A) La	at: <u>47.30.59</u>	Long: <u>122.</u> ;	20.08	Datum: <u>unknown</u>		
Soil Map Unit Name: NRCS Soil Unit is Unavailable		N	WI classification: upla	and		
Are climatic / hydrologic conditions on the site typical for this tim	e of year?Yes 🔲 N	lo 🛛 (If no, explain i	n Remarks.)			
Are Vegetation, Soil, or Hydrology significa	intly disturbed?	Are "Normal Circums	stances" present? Ye	es 🖾 No 🗌		
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, explain ar	y answers in Remark	s.)		
SUMMARY OF FINDINGS – Attach site map sho	wing sampling p	ooint locations, t	ransects, impor	tant features, etc.		
Hydrophytic Vegetation Present?       Yes ⊠       No □         Hydric Soil Present?       Yes ⊠       No □         Wetland Hydrology Present?       Yes □       No ⊠		ampled Area a Wetland?	Yes 🗌 No 🛛			
Remarks: No recent disturbance. Mining operations ended in 2	2002. Soils are mixed	from historic mining	practices. Puddles at	surface appears to be		

result recent rainfall. March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface in tire ruts.

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: 5m)	% Cover	Species?	Status	Number of Dominant Species	
1		·		That Are OBL, FACW, or FAC: <u>3</u> (A)	
2				Total Number of Dominant	
3				Species Across All Strata: <u>4</u> (B)	
4					
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/E	3)
Sapling/Shrub Stratum (Plot size: 3m)					•)
1. Populus balsamifera	40	<u>Y</u>	FAC	Prevalence Index worksheet:	
2. Cytisus scoparius	<u>10</u>	Y	UPL	Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: 1.5m)				UPL species x 5 =	
1. Agrostis capillaris	40	Y	FAC	Column Totals: (A) (E	3)
2. <u>Holcus lanatus</u>	<u>20</u>	Y	FAC		.,
3. Hypochaeris radicata		N		Prevalence Index = B/A =	
4. Trifolium repens	10	N	FAC	Hydrophytic Vegetation Indicators:	
5. <u>Plantango lanceolata</u>	5	N	FAC	1 - Rapid Test for Hydrophytic Vegetation	
6. <u>Vicia sativa</u>				☑ 2 - Dominance Test is >50%	
7				☐ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
8				4 - Morphological Adaptations <sup>1</sup> (Provide supportin	ng
9				data in Remarks or on a separate sheet)	
10				5 - Wetland Non-Vascular Plants	
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
		= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: <u>3m</u> )					
1			·	Hydrophytic	
2		·		Vegetation	
	0	= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum <u>10</u>					
Remarks:					

Profile Des	cription: (Describe	to the de-	th nooded to dee	mont the	indicator	or confi-	m the abaa	confindicators )
		to the dep				or confin	in the abser	ice of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	lox Feature %	<u>Type<sup>1</sup></u>	Loc <sup>2</sup>	Texture	Remarks
0-5	2.5Y 5/1	95	<u>2.5Y 4/4</u>	5	<u>C</u>	Μ	loamy sar	d Soils appear disturbed by grading
5-18	2.5Y 5/1	60					I. f. sand	Soils appear mixed by grading
5-18	2.5Y4/3	30						Soils appear mixed by grading
18-20+	2.5Y 5/1	50						Soils appear mixed by grading
18-20+	2.5Y 4/2	50						Soils appear mixed by grading
10-201	2.51 4/2							
·								
								·
	oncentration, D=De					ed Sand G		Location: PL=Pore Lining, M=Matrix.
-	Indicators: (Applie	cable to all			ted.)			ators for Problematic Hydric Soils <sup>3</sup> :
Histosol	( )		Sandy Redox					cm Muck (A10)
	oipedon (A2)		Stripped Matrix Loamy Mucky	. ,	1) (over			Red Parent Material (TF2) /ery Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed			WILKA I)		other (Explain in Remarks)
	d Below Dark Surfac	·e (∆11)	Depleted Matr		-)			
	ark Surface (A12)		Redox Dark Surface (F6)					cators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)			Depleted Dark					etland hydrology must be present,
				nless disturbed or problematic.				
Restrictive	Layer (if present):		-					
Туре:								
Depth (in	ches):						Hydric S	Soil Present? Yes 🖂 No 🗌
Remarks:								
HYDROLO	GY							
	drology Indicators							
-	cators (minimum of		d: check all that ap	olv)			Se	condary Indicators (2 or more required)
Surface			☐ Water-St		/es (B9) ( <b>e</b> :	cept ML		Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	iter Table (A2)		1, 2, 4	4A, and 4E	3)	-		4A, and 4B)
Saturatio	on (A3)		Salt Crus	t (B11)				Drainage Patterns (B10)
Water M	arks (B1)		Aquatic In	nvertebrate	es (B13)			Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)		Hydroger	n Sulfide O	dor (C1)			Saturation Visible on Aerial Imagery (C9)
	oosits (B3)				eres along	Living Ro		
	at or Crust (B4)				ed Iron (C4	-		Shallow Aquitard (D3)
	oosits (B5)				ion in Tilleo	,		FAC-Neutral Test (D5)
-	Soil Cracks (B6)				l Plants (D	•	,	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagerv (B		plain in Re				Frost-Heave Hummocks (D7)
	Vegetated Concav				,			
Field Obser	-		,					
						1		

Field Observations:						
Surface Water Present?	Yes 🛛	No 🗌	Depth (inches): <u>1</u>			
Water Table Present?	Yes 🗌	No 🖂	Depth (inches):			
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🛛	Depth (inches):	Wetland Hydrology Present?	Yes 🗌 No 🛛	
Describe Recorded Data (str	eam gauge	, monitor	ing well, aerial photos, previous inspec	tions), if available:		
•	, 0		termine that area does not meet wetlan	, , , , , , , , , , , , , , , , , , , ,		

oth υ inches of the surface.

Project/Site: City of Seattle Meyers Way Remainder Property City/	County: Seattle	Sampling Date:05/04/2011						
Applicant/Owner: City of Seattle	State: WA	Sampling Point: UPL-12						
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S6, T23N</u> ,	R4EWM						
Landform (hillslope, terrace, etc.): toe of slope Loc	al relief (concave, convex, none): <u>convex</u>	Slope (%): <u>2</u>						
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.60	Long: <u>122.20.09</u>	Datum: unknown						
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI classificat	ion: upland						
re climatic / hydrologic conditions on the site typical for this time of year? Yes 🔲 No 🛛 (If no, explain in Remarks.)								
Are Vegetation, Soil, or Hydrology significantly disturbe	ed? Are "Normal Circumstances" pres	ent? Yes 🛛 No 🗌						
Are Vegetation, Soil, or Hydrology naturally problematic	? (If needed, explain any answers in	Remarks.)						
SUMMARY OF FINDINGS – Attach site map showing san	npling point locations, transects,	important features, etc.						
Hydrophytic Vegetation Present?       Yes □       No ⊠         Hydric Soil Present?       Yes □       No ⊠         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland? Yes 🗌 No							
Remarks: March and April 2011 have been unseasonably rainy with 169% additional inches of precipitation during March and April. Site conditions a								

Area was mined prior to 2002. Also recently disturbed by grading for construction of Joint Training Facility. Soils are mixed and are compacted with tire ruts caused by heavy equipment.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2				Total Number of Dominant	
3			<u> </u>	Species Across All Strata: <u>6</u> (B)	
4				Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 3m)	0	= Total C	over	That Are OBL, FACW, or FAC: 50 (A/B)	
1. Populus balsamifera	30	Y	FAC	Prevalence Index worksheet:	
2. <u>Cytisus scoparius</u>				Total % Cover of: Multiply by:	
3. Rubus armeniacus				$\overline{\text{OBL species } 0} = x 1 = 0$	
4	-			FACW species $0$ x 2 = $0$	
5				FAC species <u>96</u> x 3 = <u>288</u>	
		= Total C		FACU species $35$ x 4 = $140$	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species 20 x 5 = 100	
1. Agrostis capillaris	40	<u>Y</u>	FAC	Column Totals: <u>151</u> (A) <u>528</u> (B)	
2. Holcus lanatus	20	<u>Y</u>	FAC		
3. Hypochaeris radicata	20	<u>Y</u>	FACU	Prevalence Index = $B/A = 3.5$	
4. Festuca rubra	5	<u>N</u>	FAC	Hydrophytic Vegetation Indicators:	
5. Tanacetum vulgare	5	<u>N</u>	NI	1 - Rapid Test for Hydrophytic Vegetation	
6. Rumex crispus	1	N	FAC	□ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^1$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	I
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
Woody Vine Stratum (Plot size: 3m)		= Total C		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1					
2				Hydrophytic	
	0		over	Vegetation Present? Yes □ No ⊠	
% Bare Ground in Herb Stratum 5	<u> </u>				
Remarks:				•	

Profile Des	cription: (Describe	to the de	pth needed to docu	ment the	indicator	or confir	m the absence	of indicators.)	
Depth	Matrix			ox Feature	es	0	-		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
<u>0-11</u>	<u>2.5Y 5/2</u>	50					loamy sand		
<u>11-14</u>	<u>2.5Y 5/1</u>	55	<u>10YR 4/6</u>	5	<u>C</u>	Μ	I. f. sand	Soils appear mixed by grading	
<u>11-14</u>	<u>2.5Y5/2</u>	35	<u>10YR 4/6</u>	5	С	Μ	I. f. sand	Soils appear mixed by grading	
<u>14-18+</u>	<u>2.5Y 5/2</u>	100					I. f. sand	soil is loose	
<sup>1</sup> Tvpe: C=C	oncentration. D=De	oletion. RN	/=Reduced Matrix. C	S=Covere	ed or Coat	ed Sand G	Grains. <sup>2</sup> Loo	cation: PL=Pore Lining, M=Matrix.	
	<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils <sup>3</sup> :								
Histosol	(A1)		Sandy Redox (	S5)			🗌 2 cm	n Muck (A10)	
Histic Ep	pipedon (A2)		Stripped Matrix	(S6)			🗌 Red	Parent Material (TF2)	
Black Hi			Loamy Mucky	. ,	1) ( <b>excep</b>	t MLRA 1)		/ Shallow Dark Surface (TF12)	
	n Sulfide (A4)		Loamy Gleyed	•		,	•	er (Explain in Remarks)	
_ , ,	d Below Dark Surfac	e (A11)	Depleted Matrix	•	/			· · · · · · · · · · · · · · · · · · ·	
	ark Surface (A12)	- ()	Redox Dark Su	· · /	)		<sup>3</sup> Indicato	ors of hydrophytic vegetation and	
	lucky Mineral (S1)		Depleted Dark					and hydrology must be present,	
	Bleyed Matrix (S4)		Redox Depress	`	- /			ss disturbed or problematic.	
Restrictive	Layer (if present):			. ,				·	
Туре:			_						
Depth (in	ches):		_				Hydric Soil	Present? Yes 🗌 No 🖂	
Remarks: Se	oilis appear mixed fr	om histori	c mining practices.						
HYDROLO	GY								
Wetland Hy	drology Indicators	•							

Primary Indicators (minimum	of one req	uired; ch	eck all that apply)		Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except					Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Oxidized Rhizospheres along Livin	ng Roots (C3)	Geomorphic Position (D2)
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)
Iron Deposits (B5)			Recent Iron Reduction in Tilled Sc	oils (C6)	FAC-Neutral Test (D5)
Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (	LRR A)	Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aeri	al Imagery	/ (B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)
Sparsely Vegetated Conc	ave Surfac	ce (B8)			
Field Observations:					
Surface Water Present?	Yes 🗌	No 🛛	Depth (inches):		
Water Table Present?	Yes 🗌	No 🛛	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🛛	Depth (inches):	Wetland Hy	drology Present? Yes 🗌 No 🛛
Describe Recorded Data (stre	am gauge	e, monito	ring well, aerial photos, previous inspec	ctions), if availa	able:
Remarks: No water table obse	erved with	in 18 inc	hes of the surface.		

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Project/Site: City of Seattle Meyers Way Remainder Property	City/County: Seattle	Samplin	g Date: <u>05/04/2011</u>
Applicant/Owner: City of Seattle	State	: <u>WA</u> Samplin	g Point: <u>UPL-13</u>
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, F	Range: <u>S6, T23N, R4EWN</u>	1
Landform (hillslope, terrace, etc.): toe of slope	Local relief (concave, convex, i	ione): <u>convex</u>	Slope (%): 2
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: <u>47.30.54</u> Long: <u>1</u>	22.20.12	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable		NWI classification: upla	nd
Are climatic / hydrologic conditions on the site typical for this tin	ne of year? Yes 🔲 No 🖂 (If no, expla	ain in Remarks.)	
Are Vegetation, Soil, or Hydrology signific	cantly disturbed? Are "Normal Circ	umstances" present? Ye	es 🖂 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturall	ly problematic? (If needed, explain	n any answers in Remark	s.)
SUMMARY OF FINDINGS – Attach site map she	owing sampling point location	s, transects, impor	tant features, etc.
Hydrophytic Vegetation Present?       Yes ⊠ No □         Hydric Soil Present?       Yes ⊠ No □         Wetland Hydrology Present?       Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes 🗌 No 🛛	

Remarks: March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface No recent disturbance. Area was mined prior to 2002. Also area recently disturbed by grading within utility corridor. Soils are mixed. Tire ruts caused by heavy equipment.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2 3				Total Number of Dominant Species Across All Strata: <u>3</u>	(B)
4 Sapling/Shrub Stratum (Plot size: 3m)		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u>	(A/B)
1. Populus balsamifera	15	Y	FAC	Prevalence Index worksheet:	
2. Cytisus scoparius		Y		Total % Cover of: Multiply by:	
3. Rubus armeniacus				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
·		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )	00			UPL species x 5 =	
1. Agrostis capillaris	<u>75</u>	Y	FAC	Column Totals: (A)	
2. Trifolium repens	5	N	FAC		_ (-/
3. Holcus lanatus	5	N	FAC	Prevalence Index = B/A =	
4. Plantango lanceolata	5	N	FAC	Hydrophytic Vegetation Indicators:	
5. Tanacetum vulgare	5	N	NI	1 - Rapid Test for Hydrophytic Vegetation	
6. Taraxacum officinale	1	N	FACU	☑ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^{1}$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide sup 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	in)
11 Woody Vine Stratum (Plot size: 3m)		= Total C		<sup>1</sup> Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic.	must
1					
2				Hydrophytic Vegetation	
		= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum <u>4</u>					
Remarks:					

Profile Des	cription: (Describ	e to the de	epth needed to doc	ument the	e indicato	r or confir	m the absence	e of indicators.)		
Depth	Matrix			dox Featur		. 2	<u> </u>			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
<u>0-7</u>	<u>2.5Y 5/2</u>	50	10YR 4/4	2	<u>C</u>	PL	loamy sand	Soils appear mixed by grading		
<u>0-7</u>	<u>2.5Y 4/2</u>	<u>50</u>		5	C	M	loamy sand	Soils appear mixed by grading		
<u>7-13</u>	<u>2.5Y5/1</u>	50		5	C	M	I. f. sand	Soils appear mixed by grading		
<u>7-13</u>	<u>2.5Y 5/2</u>	50					I. f. sand	Soils appear mixed by grading		
<u>13-18+</u>	<u>2.5Y 4/2</u>						I. f. sand			
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, R	M=Reduced Matrix,	CS=Cover	ed or Coat	ed Sand C	Grains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.		
Hydric Soil	Indicators: (Appli	cable to a	all LRRs, unless oth	erwise no	oted.)		Indicate	ors for Problematic Hydric Soils <sup>3</sup> :		
Histosol	(A1)		🛛 Sandy Redox	(S5)			🗌 2 cm	n Muck (A10)		
Histic Ep	pipedon (A2)		Stripped Matrix (S6)					Red Parent Material (TF2)		
Black Hi	stic (A3)			Loamy Mucky Mineral (F1) (except MLRA 1)				y Shallow Dark Surface (TF12)		
Hydroge	en Sulfide (A4)		Loamy Gleyed	d Matrix (F	2)		🗌 Oth	er (Explain in Remarks)		
Depleted Below Dark Surface (A11) Depleted Matrix (F3)										
Thick Date	ark Surface (A12)	Redox Dark S	urface (F6	6)		<sup>3</sup> Indicate	ors of hydrophytic vegetation and			
Sandy Mucky Mineral (S1)			Depleted Dark	surface (	(F7)		wetla	and hydrology must be present,		
	Bleyed Matrix (S4)		Redox Depres	ssions (F8)	)		unles	ss disturbed or problematic.		
Restrictive	Layer (if present):									
Туре:			_							
• •	ches):		_	_			-	I Present? Yes 🛛 No 🗌		
Remarks: Po	ore linings appear in	1 upper 3 i	nches of soil profile.	Soils bec	ome very o	compact fro	om 7-13 inches	and then are loose below.		
HYDROLO	GY									
	drology Indicators									
-	•••		red; check all that ap				Soco	ndary Indicators (2 or more required)		
Surface		Une requi	Water-St		voc (B0) (	weent MI				
	ater Table (A2)			4A, and 4	` '`			Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)		
Saturatio	. ,		Salt Crus		_,			prainage Patterns (B10)		
	larks (B1)			nvertebrat	oc (P13)			Pry-Season Water Table (C2)		
	. ,							•		
Sedimer	nt Deposits (B2)			n Sulfide C	Jaor (C1)		ЦS	aturation Visible on Aerial Imagery (C9)		

Wetland Hydrology Indicators:								
Primary Indicators (minimum	of one req	Secondary Indicators (2 or more required)						
Surface Water (A1)			□ Water-Stained Leaves (B9) (exce	pt MLRA	U Water-Stained Leaves (B9) (MLRA 1, 2,			
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)			
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)			
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)			
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3)			Oxidized Rhizospheres along Livir	ng Roots (C3)	Geomorphic Position (D2)			
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)			
Iron Deposits (B5)			Recent Iron Reduction in Tilled Soils (C6)		FAC-Neutral Test (D5)			
□ Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (LRR A)		Raised Ant Mounds (D6) (LRR A)			
Inundation Visible on Aeria	al Imagery	' (B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)			
Sparsely Vegetated Conce	ave Surfac	e (B8)						
Field Observations:								
Surface Water Present?	Yes 🗌	No 🖂	Depth (inches):					
Water Table Present?	Yes 🗌	No 🖂	Depth (inches):					
Saturation Present? Yes □ No ⊠ (includes capillary fringe)			Depth (inches): Wetland Hy		drology Present? Yes 🗌 No 🛛			
Describe Recorded Data (stre	am gauge	, monito	ing well, aerial photos, previous inspec	tions), if availa	able:			
	Remarks: Use best professional judgement to determine that area does not meet wetland hydrology criteria. Saturation in tire ruts appears to be							
surface water from recent rain	and is no	t linked t	o groundwater. No water table observe	ed within 18 in	cnes of the surface.			

Project/Site: City of Seattle Meyers Way Remainder Property	City/County: Seattle	Sampling Date:05/04/2011
Applicant/Owner: City of Seattle	State: WA	Sampling Point: UPL-14
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, 1</u>	23N, R4EWM
Landform (hillslope, terrace, etc.): <u>flat</u>	_Local relief (concave, convex, none): conca	ave Slope (%): 0
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.3	30.58 Long: <u>122.22.58</u>	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI class	sification: upland
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes 🔲 No 🛛 (If no, explain in Reman	·ks.)
Are Vegetation X_, Soil, or Hydrology significantly disturbed?	? Are "Normal Circumstances" present	? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally proble	ematic? (If needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transe	cts, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ No □ Yes □ No ⊠ Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes 🗌 No 🖾				
Remarks: March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42							

Additional inches of precipitation during March and April.

Recent cutting of vegetation within Seattle City Light utility corridor, but vegetation has started to re-grow, therefore, normal circumstances still present

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (	(A)
2			<u> </u>	Total Number of Dominant	
3					B)
4				Percent of Dominant Species	
	0	= Total C	over	That Are OBL, FACW, or FAC: <u>75</u> (A	A/B)
Sapling/Shrub Stratum (Plot size: 3m)					,
1. Salix sitchensis		<u>Y</u>		Prevalence Index worksheet:	
2. Populus balsamifera	5	<u>Y</u>	FAC	Total % Cover of:Multiply by:	
3. Rubus armeniacus	5	<u>Y</u>	FACU	OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
	20	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	
1. Cardimine oligosperma	20	<u>Y</u>	FAC	Column Totals: (A)	(B)
2. Equisetum arvense	<u>10</u>	N	FAC		
3. Holcus lanatus	10	<u>N</u>	FAC	Prevalence Index = B/A =	
4. Epilobium ciliatum	10	<u>N</u>	FAC	Hydrophytic Vegetation Indicators:	
5. Geum macrophyllum	5	<u>N</u>	FACW	1 - Rapid Test for Hydrophytic Vegetation	
6. Ranunculs repens	5	N	FACW	☑ 2 - Dominance Test is >50%	
7. Geranium robertianum	5	N	UPL	□ 3 - Prevalence Index is $\leq 3.0^1$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide support data in Remarks or on a separate sheet)	orting
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	)
11 Woody Vine Stratum (Plot size: 3m)	65			<sup>1</sup> Indicators of hydric soil and wetland hydrology mube present, unless disturbed or problematic.	ust
1.       2.				Hydrophytic Vegetation	
V Dara Cround in Llark Stratum 25	0	= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum 25 Remarks:					
INCIDAINS.					

			depth n				or confirm	n the ab	osence of indicators.)
Depth (inches)	<u>Matrix</u> Color (moist)	%		Re pr (moist)	dox Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re Remarks
0-9	10YR 3/2	100						sandy	
		100				·			
<u>9-24+</u>	<u>2.5Y 4/2</u>	100						loamy	
1 <b>T</b>				duesed Metric					<sup>2</sup> l continue DI - Dara Lining M-Matrix
	oncentration, D=D Indicators: (App						a Sand Gi		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. indicators for Problematic Hydric Soils <sup>3</sup> :
				Sandy Redox					2 cm Muck (A10)
	oipedon (A2)			Stripped Matr	. ,				Red Parent Material (TF2)
Black Hi				Loamy Mucky	. ,	) (except l	MLRA 1)		Very Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)			Loamy Gleye	d Matrix (F2)				Other (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		Depleted Mat	rix (F3)				
	ark Surface (A12)			Redox Dark S				<sup>3</sup>	ndicators of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Darl	•	7)			wetland hydrology must be present,
•	Bleyed Matrix (S4)			Redox Depres	ssions (F8)			1	unless disturbed or problematic.
	Layer (if present)								
Type:			<u> </u>						
Depth (in	cnes):							Hyar	ric Soil Present? Yes 🗌 No 🛛
Remarks: .									
HYDROLO	GY								
•	drology Indicator								
Primary Indi	<u>cators (minimum o</u>	f one req	uired; ch	eck all that ap	ply)				Secondary Indicators (2 or more required)
Surface	( )			□ Water-S	tained Leave	s (B9) ( <b>ex</b>	cept MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ater Table (A2)				4A, and 4B)				4A, and 4B)
Saturatio	on (A3)			Salt Crus	st (B11)				Drainage Patterns (B10)
Water M	larks (B1)			Aquatic	nvertebrates	(B13)			Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)			Hydroge	n Sulfide Ode	or (C1)			Saturation Visible on Aerial Imagery (C9)
🛛 Drift Dep	oosits (B3)				Rhizosphere	es along L	iving Roo	ts (C3)	Geomorphic Position (D2)
Algal Ma	at or Crust (B4)			Presence	e of Reduced	l Iron (C4)			Shallow Aquitard (D3)
Iron Dep	oosits (B5)			Recent I	ron Reductio	n in Tilled	Soils (C6	)	FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted	or Stressed F	Plants (D1	) (LRR A)	)	Raised Ant Mounds (D6) (LRR A)
🗌 Inundati	on Visible on Aeria	I Imagery	′ (B7)	Other (E	xplain in Ren	narks)			Frost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ive Surfac	ce (B8)						
Field Obser	vations:								
Surface Wat	ter Present?	Yes 🗌	No 🛛	Depth (inch	es):				
Water Table	Present?	Yes 🗌	No 🛛	Depth (inch	es):				
Saturation P	Present?	Yes 🗌	No 🖂	Depth (inch	es):		Wetl	and Hy	drology Present? Yes 🗌 No 🖂

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

Yes 🗌 No 🖾 Depth (inches): \_

Remarks: Use best professional judgement to determine that area does not meet wetland hydrology criteria. Depression appears to be an infiltration facility and infiltrates water very quickly. Given the puddled water areas that are widespread throughout the site, and the absence of saturation or groudwater within 24 inches of the surface, the area is not likely to be saturated to the surface or inundated for sufficient duration during the growing season to meet the wetland definition.

Project/Site: City of Seattle Meyers Way Remainder Property	City/County: Seattle	Sampling Date:05/04/2011					
Applicant/Owner: City of Seattle	State: WA	Sampling Point: UPL-15					
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S32, T24</u>	N, R4EWM					
Landform (hillslope, terrace, etc.): <u>flat</u>	Local relief (concave, convex, none): none	Slope (%): <u>0</u>					
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.3	1.02 Long: <u>122.20.01</u>	Datum: unknown					
Soil Map Unit Name: NRCS Soil Unit is Unavailable NWI classification: upland							
Are climatic / hydrologic conditions on the site typical for this time of year	Are climatic / hydrologic conditions on the site typical for this time of year? Yes 🔲 No 🛛 (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hydrology significantly disturbed? 🛛 Are "Normal Circumstances" present? Yes 🖂 No 🗌							
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)							
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present?       Yes ☑       No □         Hydric Soil Present?       Yes □       No ☑         Wetland Hydrology Present?       Yes □       No ☑	Is the Sampled Area within a Wetland? Yes 🗌 N	o 🖂					

Remarks: No recent disturbance. Mining operations ended in 2002. Soils are mixed from historic mining practices. Puddles at surface appears to be result recent rainfall. March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with puddling water on the surface in tire ruts.

	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: 5m)	% Cover	Species?	Status	Number of Dominant Species	
1		·		That Are OBL, FACW, or FAC: 3	(A)
2				Total Number of Dominant	
3					B)
4				Demonstrat Demoissant On a size	
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A	A/B)
Sapling/Shrub Stratum (Plot size: 3m)					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1. Rubus armeniacus	<u>10</u>	<u>Y</u>	FACU	Prevalence Index worksheet:	
2. Cytisus scoparius	5	Y	UPL	Total % Cover of: Multiply by:	-
3. Populus balsamifera	5	Y	FAC	OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	_
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )	-			UPL species x 5 =	
1. Agrostis capillaris	40	Y	FAC	Column Totals: (A)	
2. Elymus repens	30	Y	FAC		(=)
3. Holcus lanatus		N	FAC	Prevalence Index = B/A =	
4. Rumex crispus	5	N	FAC	Hydrophytic Vegetation Indicators:	
5. Juncus effusus	5	N	FACW	1 - Rapid Test for Hydrophytic Vegetation	
6. <u>Plantango lanceolata</u>				2 - Dominance Test is >50%	
7. Daucus carota			UPL	☐ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
8. <u>Vicia sativa</u>	1	N	UPL	4 - Morphological Adaptations <sup>1</sup> (Provide support data in Remarks or on a separate sheet)	orting
9		·		$\Box$ 5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	`
11					
Woody Vine Stratum (Plot size: 3m)	94	= Total C	over	<sup>1</sup> Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.	ust
1 2				Hydrophytic	
	0			Vegetation Present? Yes ⊠ No □	
% Bare Ground in Herb Stratum <u>6</u>	0				
Remarks:				1	
	epth needed to document the indicator or confirm the a	absence of mulcators.			
--	--	--	--	--	
Depth <u>Matrix</u> (inches) Color (moist) %	_ <u>Redox Features</u> Color (moist) <u>%</u> Type <sup>1</sup> Loc <sup>2</sup> Tex	ture Remarks			
0-3 2.5Y 4/2 100		ly loam			
3-6 2.5Y 4/1 100					
		iy sand			
<u>6-12+ 2.5Y 4/2 60</u>	<u>l. f. s</u>				
<u>6-12+ 2.5Y 5/2 40</u>	<u>l. f. s</u>	and mixed matrix			
	M=Reduced Matrix, CS=Covered or Coated Sand Grains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators: (Applicable to a		Indicators for Problematic Hydric Soils <sup>3</sup> :			
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)			
☐ Histosof (AT) ☐ Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)			
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)			
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)			
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)				
Thick Dark Surface (A12)	Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and			
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,			
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.			
Restrictive Layer (if present):					
Туре:	_				
Depth (inches):	_ Hy	dric Soil Present? Yes 🗌 No 🛛			
Remarks: Soil is compacted below six incl	nes. Aerial photos indicate the area was used as equipme	ent yard.			
HYDROLOGY					
Wetland Hydrology Indicators:					
Primary Indicators (minimum of one requir		Secondary Indicators (2 or more required)			
Surface Water (A1)	Water-Stained Leaves (B9) (except MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,			
<ul><li>☑ Surface Water (A1)</li><li>☐ High Water Table (A2)</li></ul>		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)			
Surface Water (A1)	Water-Stained Leaves (B9) (except MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,			
<ul><li>☑ Surface Water (A1)</li><li>☐ High Water Table (A2)</li></ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA</li> <li>1, 2, 4A, and 4B)</li> </ul>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> <li>Saturation (A3)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA</li> <li>1, 2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (MLRA 1, 2,</li> <li>4A, and 4B)</li> <li>Drainage Patterns (B10)</li> </ul>			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> <li>Saturation (A3)</li> <li>Water Marks (B1)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA</li> <li>1, 2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> </ul>	<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>			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> <li>Saturation (A3)</li> <li>Water Marks (B1)</li> <li>Sediment Deposits (B2)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> <li>Hydrogen Sulfide Odor (C1)</li> </ul>	<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>			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> <li>Saturation (A3)</li> <li>Water Marks (B1)</li> <li>Sediment Deposits (B2)</li> <li>Drift Deposits (B3)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA         <ol> <li>1, 2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres along Living Roots (C3)</li> </ol> </li> </ul>	<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>			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> <li>Saturation (A3)</li> <li>Water Marks (B1)</li> <li>Sediment Deposits (B2)</li> <li>Drift Deposits (B3)</li> <li>Algal Mat or Crust (B4)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA         <ol> <li>2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres along Living Roots (C3</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled Soils (C6)</li> </ol> </li> </ul>	<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>			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> <li>Saturation (A3)</li> <li>Water Marks (B1)</li> <li>Sediment Deposits (B2)</li> <li>Drift Deposits (B3)</li> <li>Algal Mat or Crust (B4)</li> <li>Iron Deposits (B5)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA         <ol> <li>2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres along Living Roots (C3)</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled Soils (C6)</li> <li>Stunted or Stressed Plants (D1) (LRR A)</li> </ol> </li> </ul>	<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> <li>Raised Ant Mounds (D6) (LRR A)</li> </ul>			
<ul> <li>Surface Water (A1)</li> <li>High Water Table (A2)</li> <li>Saturation (A3)</li> <li>Water Marks (B1)</li> <li>Sediment Deposits (B2)</li> <li>Drift Deposits (B3)</li> <li>Algal Mat or Crust (B4)</li> <li>Iron Deposits (B5)</li> <li>Surface Soil Cracks (B6)</li> </ul>	<ul> <li>Water-Stained Leaves (B9) (except MLRA         <ol> <li>2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> <li>Hydrogen Sulfide Odor (C1)</li> <li>Oxidized Rhizospheres along Living Roots (C3)</li> <li>Presence of Reduced Iron (C4)</li> <li>Recent Iron Reduction in Tilled Soils (C6)</li> <li>Stunted or Stressed Plants (D1) (LRR A)</li> </ol> </li> <li>37) Other (Explain in Remarks)</li> </ul>	<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>			

(includes capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks: Use best professional judgement to determine that area does not meet wetland hydrology criteria. Water is present at the surface to depth
of 1 inch within tire ruts, but this appears to be surface water from recent rain and is not linked to groundwater. No water table observed within 12
inches of the surface.

Depth (inches): 1

Depth (inches):

Depth (inches):

Surface Water Present?

Water Table Present?

Saturation Present?

Yes 🛛 No 🗌

Yes 🗌 No 🖾

Yes 🗌 No 🖾

Wetland Hydrology Present? Yes 🗌 No 🖂

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

Project/Site: City of Seattle Meyers Way Remainder Property	City/County: Seattle	Sa	ampling Date:05/04/2011						
Applicant/Owner: City of Seattle	S	tate: <u>WA</u> Sa	ampling Point: UPL-16						
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Townsh	ip, Range: <u>S31, T24N, F</u>	R4EWM						
Landform (hillslope, terrace, etc.): toe of slope	Local relief (concave, conv	ex, none): <u>convex</u>	Slope (%): <u>5</u>						
Subregion (LRR): Northwest Forests and Coasts (LRR A)	Lat: <u>47.31.03</u> Lon	g: <u>122.20.07</u>	Datum: unknown						
Soil Map Unit Name: NRCS Soil Unit is Unavailable	Soil Map Unit Name: NRCS Soil Unit is Unavailable NWI classification: upland								
Are climatic / hydrologic conditions on the site typical for this til	me of year? Yes 🗌 No 🛛 (If no, e	xplain in Remarks.)							
Are Vegetation, Soil, or Hydrology signific	cantly disturbed? Are "Normal	Circumstances" present	?Yes 🛛 No 🗌						
Are Vegetation, Soil, or Hydrology natural	lly problematic? (If needed, ex	plain any answers in Re	emarks.)						
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.									
Hydrophytic Vegetation Present?       Yes ⊠ No □         Hydric Soil Present?       Yes □ No ⊠         Wetland Hydrology Present?       Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes 🗌 No 🗵	3						

Remarks: March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with large areas of puddling water on the surface

Area was graded for construction of Joint Training Facility. Soils are mixed from recent grading, and puddles at surface appears to be result of soil compaction by heavy equipment. Puddles at surface appears to be result recent rainfall.

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

	Absolute		Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2 3				Total Number of Dominant Species Across All Strata: 2	(B)
				Species Across Air Strata. $\underline{2}$	(6)
4 Sapling/Shrub Stratum (Plot size: <u>3m</u> )		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	
1. Agrostis capillaris	85	<u>Y</u>	FAC	Column Totals: (A)	
2. Rumex crispus	5	<u>Y</u>	FAC	、 ,	_ 、 /
3. Plantango lanceolata	5	N	FAC	Prevalence Index = B/A =	
4. Cardimine oligosperma	5	N	FAC	Hydrophytic Vegetation Indicators:	
5				1 - Rapid Test for Hydrophytic Vegetation	
6				☑ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^{1}$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide sup data in Remarks or on a separate sheet)	
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Explai	n)
11 Woody Vine Stratum (Plot size: 3m)	100			<sup>1</sup> Indicators of hydric soil and wetland hydrology r be present, unless disturbed or problematic.	nust
1					
2				Hydrophytic Vegetation	
% Bare Ground in Herb Stratum 0	0	= Total C	Cover	Present? Yes 🛛 No 🗌	
Remarks:					
nomano.					

Profile Des	cription: (Describe	to the de	epth needed to docu	ment the i	indicator	or confirm	n the absence	of indicators.)	
Depth	Matrix		Redo	ox Feature	s				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Re	emarks
0-3	<u>2.5Y 4/2</u>	100				. <u> </u>	sandy loam		
3-7	<u>2.5Y 5/1</u>	40					I. f. sand	mixed matrix	
3-7	<u>2.5Y 5/2</u>	60					I. f. sand	mixed matrix	
					<u> </u>				
<sup>1</sup> Tvpe: C=C	oncentration. D=Der	pletion. RN	M=Reduced Matrix, C	S=Covere	d or Coate	ed Sand G	rains. <sup>2</sup> Lo	cation: PL=Pore	e Lining, M=Matrix.
			II LRRs, unless othe						atic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (	S5)			□ 2 cm	n Muck (A10)	-
	pipedon (A2)		Stripped Matrix	,				Parent Material	(TF2)
Black Hi			Loamy Mucky N	. ,	) (except	MLRA 1)		Shallow Dark S	· · /
	n Sulfide (A4)		Loamy Gleyed	•		,		er (Explain in Re	. ,
_ , 0	Below Dark Surfac	e (A11)	Depleted Matrix	•	/				/
	ark Surface (A12)	- ( )	Redox Dark Surface (F6)			<sup>3</sup> Indicators of hydrophytic vegetation and			
	lucky Mineral (S1)		Depleted Dark Surface (F7)			wetland hydrology must be present,			
-	Gleyed Matrix (S4)		Redox Depress		.,			s disturbed or p	
Restrictive	Layer (if present):								
Туре:			_						
Depth (in	,		_				Hydric Soil	Present? Ye	es 🗌 No 🛛
Remarks: So	oil is compacted belo	ow seven i	inches.						

#### HYDROLOGY

Wetland Hydrology Indicators:							
Primary Indicators (minimum c	Secondary Indicators (2 or more required)						
Surface Water (A1)			□ Water-Stained Leaves (B9) (exce	pt MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,		
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)		
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)		
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)		
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)			Oxidized Rhizospheres along Livir	ng Roots (C3)	Geomorphic Position (D2)		
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)		
Iron Deposits (B5)	s (B5)		FAC-Neutral Test (D5)				
Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (I	RR A)	Raised Ant Mounds (D6) (LRR A)		
Inundation Visible on Aeria	al Imagery	′ (B7)	Other (Explain in Remarks)		Frost-Heave Hummocks (D7)		
Sparsely Vegetated Conca	ave Surfac	ce (B8)					
Field Observations:							
Surface Water Present?	Yes 🛛	No 🗌	Depth (inches): 1				
Water Table Present?	Yes 🗌	No 🖂	Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🖂	Depth (inches):	Wetland Hy	drology Present? Yes 🗌 No 🛛		
Describe Recorded Data (stre	am gauge	, monito	ring well, aerial photos, previous inspec	tions), if availa	able:		
			letermine that area does not meet weth o be surface water from recent rain and		criteria. Water is present at the surface to o groundwater.		

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

Project/Site: City of Seattle Meyers Way Remainder Property City.	/County: <u>Seattle</u>	Sampling Date:05/04/2011					
Applicant/Owner: City of Seattle	State: WA	Sampling Point: UPL-17					
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S31, T24</u>	N, R4EWM					
Landform (hillslope, terrace, etc.): depression Lo	cal relief (concave, convex, none): <u>concave</u>	Slope (%): <u>2</u>					
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.31.04	Long: <u>122.20.11</u>	Datum: unknown					
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>	Soil Map Unit Name: NRCS Soil Unit is Unavailable NWI classification: upland						
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 disturb	ed? Are "Normal Circumstances" pres	sent? Yes 🛛 No 🗌					
Are Vegetation, Soil, or Hydrology naturally problemati	c? (If needed, explain any answers in	Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing sa	mpling point locations, transects,	important features, etc.					
Hydrophytic Vegetation Present?       Yes ⊠       No □         Hydric Soil Present?       Yes □       No ⊠         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland? Yes 🗌 N	⊙ ⊠					
Remarks: March and April 2011 have been unseasonably rainy with 169% additional inches of precipitation during March and April. Site conditions a							
Sample plot is located at toe of steep slope. Area was graded for construction of Joint Training Facility. Soils are mixed from recent grading, and puddles at surface appears to be result of soil compaction by heavy equipment. Puddles at surface appears to be result recent rainfall.							

# VEGETATION – Use scientific names of plants.

	Absolute	Dominan	t Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 5m)	% Cover			Number of Dominant Species		
1				That Are OBL, FACW, or FAC:	: 2	(A)
2						
3				Total Number of Dominant Species Across All Strata:	3	(B)
4					<u> </u>	(2)
		= Total (		Percent of Dominant Species		
Sapling/Shrub Stratum (Plot size: 3m)	<u> </u>	Total	5000	That Are OBL, FACW, or FAC:	<u>66</u>	(A/B)
1. <u>Cytisus scoparius</u>	40	Y	UPL	Prevalence Index worksheet:	:	
2				Total % Cover of:	Multiply by:	
3.				OBL species		
4				FACW species		
5				FAC species		
0		= Total (		FACU species		
Herb Stratum (Plot size: 1.5m)	40	- 10tart	50061	UPL species		
1. <u>Festuca rubra</u>	50	Y	FAC	Column Totals:		
2. Phalaris arundinacea		Y	FACW		(~)	_ (D)
3. Equisetum arvense				Prevalence Index = B/A	=	
4. Rumex crispus				Hydrophytic Vegetation India	cators:	
5. Polygonum cuspidatum				1 - Rapid Test for Hydroph	ytic Vegetation	
6				2 - Dominance Test is >50	%	
7				☐ 3 - Prevalence Index is ≤3.	.0 <sup>1</sup>	
8				4 - Morphological Adaptatio		
9				data in Remarks or on	a separate sheet)	)
10				5 - Wetland Non-Vascular	Plants <sup>1</sup>	
11				Problematic Hydrophytic V	egetation <sup>1</sup> (Explai	in)
· · · ·		= Total (		<sup>1</sup> Indicators of hydric soil and w		must
Woody Vine Stratum (Plot size: 3m)	100	- 10tart	50061	be present, unless disturbed or	r problematic.	
1						
2				Hydrophytic Vegetation		
		= Total (	Cover	Present? Yes X	No 🗌	
% Bare Ground in Herb Stratum 0	<u>~</u>					
Remarks:						

Profile Desc	cription: (Describe	to the de	epth needed to docu	ument the indic	cator or co	nfirm	the absence	e of indicators.)
Depth	Matrix		-	ox Features				
(inches)	Color (moist)	%	Color (moist)	<u>% Ty</u>	pe <sup>1</sup> Loo	2	Texture	Remarks
<u>0-2</u>	<u>2.5Y 4/2</u>	100					loamy sand	
<u>2-12</u>	<u>2.5Y 5/2</u>	100	·			[	loamy sand	
<u>12-20+</u>	<u>2.5Y 5/3</u>	100					loamy sand	
						·		
			·			·		
1						·		
			M=Reduced Matrix, C		Coated Sar	nd Gra		ocation: PL=Pore Lining, M=Matrix.
-		cable to a	III LRRs, unless oth					ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1) bipedon (A2)		Sandy Redox Stripped Matrix					m Muck (A10) d Parent Material (TF2)
Black Hi	,		Loamy Mucky	· · ·	rcent MI R	A 1)		y Shallow Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed	. , .		,		er (Explain in Remarks)
	Below Dark Surfac	e (A11)	Depleted Matri				_	, , , , , , , , , , , , , , , , , , ,
Thick Da	ark Surface (A12)		Redox Dark Si	urface (F6)			<sup>3</sup> Indicat	ors of hydrophytic vegetation and
-	lucky Mineral (S1)		Depleted Dark	( )			wetla	and hydrology must be present,
	leyed Matrix (S4)		Redox Depres	sions (F8)			unle	ss disturbed or problematic.
Restrictive	Layer (if present):							
Туре:			_					
Depth (in	ches):		_				Hydric Soi	il Present? Yes 🗌 No 🛛
Remarks:							•	
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
Primary Indi	cators (minimum of	one requi	red; check all that ap	oly)			Seco	ondary Indicators (2 or more required)
Surface	Water (A1)		Water-Sta	ained Leaves (B	39) (except	MLR	a ⊡ v	Vater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)			IA, and 4B)				4A, and 4B)
Saturatio	on (A3)		Salt Crus	t (B11)				Drainage Patterns (B10)
Water M				vertebrates (B1	13)			Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)		Hydroger	Sulfide Odor (C	C1)		🗆 s	Saturation Visible on Aerial Imagery (C9)
🗌 Drift Dep	oosits (B3)		Oxidized	Rhizospheres a	long Living	Roots	s (C3) 🔲 G	Geomorphic Position (D2)
🗌 Algal Ma	t or Crust (B4)		Presence	of Reduced Iro	on (C4)		🗆 s	Shallow Aquitard (D3)
Iron Dep	osits (B5)		Recent In	on Reduction in	Tilled Soils	s (C6)	🗆 F	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted c	r Stressed Plan	nts (D1) ( <b>LR</b>	R A)		Raised Ant Mounds (D6) (LRR A)
🗌 Inundatio	on Visible on Aerial I	magery (	B7) 🗌 Other (Ex	plain in Remark	(S)		🗆 F	Frost-Heave Hummocks (D7)
Sparsely	Vegetated Concave	e Surface	(B8)					
Field Obser	vations:							
Surface Wat	er Present?	/es 🗌 🛛 I	No 🛛 🛛 Depth (inche	es):	_			
Water Table	Present?	/es 🗌 🏼 I	No 🛛 Depth (inche	es):				
Saturation P (includes ca		∕es 🗌 I	No 🛛 Depth (inche	es):		Wetla	nd Hydrolog	gy Present? Yes 🗌 No 🛛

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

Remarks:

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

Project/Site: City of Seattle Meyers Way Remainder Property City	/County: Seattle Sampling I	Date: <u>05/04/2011</u>
Applicant/Owner: City of Seattle	State: WA Sampling I	Point: <u>UPL-18</u>
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, T23N, R4EWM</u>	
Landform (hillslope, terrace, etc.): flat Loc	cal relief (concave, convex, none): none	_ Slope (%): <u>0</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.58	Long: <u>122.20.00</u>	Datum: <u>unknown</u>
Soil Map Unit Name: <u>NRCS Soil Unit is Unavailable</u>	NWI classification: upland	<u>I</u>
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes 🔲 No 🛛 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly disturbe	ed? Are "Normal Circumstances" present? Yes	🛛 No 🗌
Are Vegetation, Soil, or Hydrology naturally problemation	c? (If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing sar	mpling point locations, transects, importa	nt features, etc.
Hydrophytic Vegetation Present?       Yes □       No ⊠         Hydric Soil Present?       Yes □       No ⊠         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland? Yes □ No ⊠	

Remarks: No recent disturbance. Mining operations ended in 2002. Soils are mixed from historic mining practices. Puddles at surface appears to be result recent rainfall. March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with puddling water on the surface in tire ruts.

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

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4		·		
		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
Sapling/Shrub Stratum (Plot size: 3m)				
1. Rubus armeniacus	20	Y	FAC	Prevalence Index worksheet:
2. Populus balsamifera	5	Y	UPL	Total % Cover of: Multiply by:
3				OBL species <u>0</u> x 1 = <u>0</u>
4				FACW species <u>15</u> x 2 = <u>30</u>
5				FAC species <u>45</u> x 3 = <u>135</u>
		= Total C		FACU species <u>20</u> x 4 = <u>80</u>
Herb Stratum (Plot size: 1.5m)				UPL species <u>15</u> x 5 = <u>75</u>
1. Elyums repens	30	Y	NI	Column Totals: <u>95</u> (A) <u>320</u> (B)
2. Agrostis capillaris	15	N	FAC	
3. Hypochaeris radicata	<u>15</u>	N	FACU	Prevalence Index = $B/A = 3.4$
4. Juncus effusus	15	N	FACW	Hydrophytic Vegetation Indicators:
5. Rumex crispus	5	N	FAC	1 - Rapid Test for Hydrophytic Vegetation
6. <u>Senecio jacobaea</u>	5	N	FACU	2 - Dominance Test is >50%
7. Geranium carolinianum	5	N	UPL	☐ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8. <u>Daucus carota</u>		N	UPL	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9. Plantango lanceolata	5	N	FAC	$\Box$ 5 - Wetland Non-Vascular Plants <sup>1</sup>
10				
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 3m)	<u>100</u>		over	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1				
2				Hydrophytic
	0			Vegetation Present? Yes □ No ⊠
% Bare Ground in Herb Stratum <u>0</u>	<u>.</u>	- 101010		
Remarks:				•

inches)	Matr Color (moist)	%	Color (moist)	lox Feature %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
-4	2.5Y 4/2						loam			
4-12	2.5Y 5/2						loam			
12-18+	2.5Y 5/2	60					I. f. sand	mixed matrix		
		40					<u></u>			
12-18+	<u>2.5Y 5/1</u>	<u>40</u>			·			mixed matrix		
	- <u> </u>									
			M=Reduced Matrix, (			ed Sand G		ocation: PL=Pore Lining, M=Matrix.		
•	· ·	plicable to a	all LRRs, unless oth		ed.)			tors for Problematic Hydric Soils <sup>3</sup> :		
Histos	Epipedon (A2)		Sandy Redox					m Muck (A10) d Parent Material (TF2)		
	Histic (A3)		Loamy Mucky	. ,	) (except	MIRA 1		ry Shallow Dark Surface (TF12)		
_	gen Sulfide (A4)		Loamy Gleyed	•			Other (Explain in Remarks)			
Deplet	ed Below Dark Su	rface (A11)	Depleted Matr		, ,		_			
•	Dark Surface (A12)	• •	Redox Dark Surface (F6)				<sup>3</sup> Indicators of hydrophytic vegetation and			
Sandy	Mucky Mineral (S	1)	Depleted Dark	Depleted Dark Surface (F7)				wetland hydrology must be present,		
Sandy	Gleyed Matrix (S4	ł)	Redox Depres	sions (F8)			unle	ess disturbed or problematic.		
Restrictiv	e Layer (if presen	nt):								
Type:										
Depth (	inches):		_				Hydric So	il Present? Yes 🗌 No 🛛		
	Soils appear to be	mixed below	12 inches. This is li	kely a resul	t of mining	g activities	6-inch diam	eter piece of asphault at depth of 12		
nches.										
YDROL	001									

Primary Indicators (minimum of one required; check all that apply)					Secondary Indicators (2 or more required)			
Surface Water (A1)	Surface Water (A1) Water-Stained Leaves (B9) (except I			ot MLRA	Water-Stained Leaves (B9) (MLRA 1, 2,			
High Water Table (A2)			1, 2, 4A, and 4B)		4A, and 4B)			
Saturation (A3)			Salt Crust (B11)		Drainage Patterns (B10)			
Water Marks (B1)			Aquatic Invertebrates (B13)		Dry-Season Water Table (C2)			
Sediment Deposits (B2)			Hydrogen Sulfide Odor (C1)		Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3)			Oxidized Rhizospheres along Livir	ng Roots (C3)	Geomorphic Position (D2)			
Algal Mat or Crust (B4)			Presence of Reduced Iron (C4)		Shallow Aquitard (D3)			
Iron Deposits (B5)			Recent Iron Reduction in Tilled So	ils (C6)	FAC-Neutral Test (D5)			
Surface Soil Cracks (B6)			Stunted or Stressed Plants (D1) (L	.RR A)	Raised Ant Mounds (D6) (LRR A)			
Inundation Visible on Aeria	Inundation Visible on Aerial Imagery (B7) 🛛 🗌 Other (Explain in Remarks)			Frost-Heave Hummocks (D7)				
Sparsely Vegetated Conca	ave Surfac	ce (B8)						
Field Observations:								
Surface Water Present?	Yes 🛛	No 🗌	Depth (inches): 1					
Water Table Present?	Yes 🗌	No 🖂	Depth (inches): <u>18</u>					
Saturation Present? (includes capillary fringe)	Yes 🗌	No 🛛	Depth (inches): <u>15</u>	Wetland Hy	drology Present? Yes 🗌 No 🛛			
Describe Recorded Data (stre	am gauge	, monitor	ing well, aerial photos, previous inspec	tions), if availa	able:			
Remarks: Use best professional judgement to determine that area does not meet wetland hydrology criteria. Water is present at the surface to depth of 1 inch within tire ruts, but this appears to be surface water from recent rain and is not linked to groundwater. Soils saturation is below depth of 15 inches.								

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

Project/Site: City of Seattle Meyers Way Remainder Property Cit	ty/County: Seattle S	ampling Date:05/04/2011
Applicant/Owner: City of Seattle	State: <u>WA</u> S	ampling Point: <u>UPL-19</u>
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, T23N, R</u>	4EWM
Landform (hillslope, terrace, etc.): flat L	ocal relief (concave, convex, none): none	Slope (%): 0
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.6	0 Long: <u>122.20.02</u>	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI classificatio	n: <u>upland</u>
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes 🔲 No 🛛 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significantly distur	bed? Are "Normal Circumstances" presen	t? Yes 🖾 No 🗌
Are Vegetation, Soil, or Hydrology naturally problema	tic? (If needed, explain any answers in R	emarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locations, transects, ir	nportant features, etc.
Hydrophytic Vegetation Present?       Yes ⊠       No □         Hydric Soil Present?       Yes □       No ⊠         Wetland Hydrology Present?       Yes □       No ⊠	Is the Sampled Area within a Wetland? Yes 🗌 No [	3

Remarks: No recent disturbance. Mining operations ended in 2002. Soils are mixed from historic mining practices. Puddles at surface appears to be result recent rainfall. March and April 2011 have been unseasonably rainy with 169% of normal rainfall for the two months combined. This amounts to 4.42 additional inches of precipitation during March and April. Site conditions are very wet as a result with puddling water on the surface in tire ruts.

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

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	<u>% Cover</u>	Species?	·	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2		·		Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Demonst of Deminant Creation
	0	= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
Sapling/Shrub Stratum (Plot size: 3m)				
1. Rubus armeniacus	30	<u>Y</u>	FAC	Prevalence Index worksheet:
2. Cytisus scoparius	<u>10</u>	<u>Y</u>	UPL	Total % Cover of: Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total C		FACU species x 4 =
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =
1. Agrostis capillaris	40	<u>Y</u>	FAC	Column Totals: (A) (B)
2. Holcus lanatus	20	<u>Y</u>	FAC	
3. Hypochaeris radicata	10	N	FACU	Prevalence Index = B/A =
4. Tanacetum vulgare	<u>10</u>	N	NI	Hydrophytic Vegetation Indicators:
5. <u>Plantango major</u>	5	N	FACU	1 - Rapid Test for Hydrophytic Vegetation
6. Trifolim repens	5	N	FACU	☑ 2 - Dominance Test is >50%
7				□ 3 - Prevalence Index is $\leq 3.0^1$
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	90			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 3m)	30	- 101010	00001	be present, unless disturbed or problematic.
1				
2				Hydrophytic Vegetation
	0	= Total C	over	Present? Yes 🛛 No 🗌
% Bare Ground in Herb Stratum <u>10</u>				
Remarks:				

Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth	Matrix		Redo	x Features				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks	
0-4	<u>2.5Y 4/2</u>						gr. s. loam	
<u>4-9+</u>	2.5Y 5/2						v.gr.s. loam	
			I=Reduced Matrix, C			d Sand G		
-		able to al	II LRRs, unless othe	rwise note	ed.)		Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol	. ,		Sandy Redox (	,			2 cm Muck (A10)	
	ipedon (A2)		Stripped Matrix	· /			Red Parent Material (TF2)	
Black His	. ,		Loamy Mucky N	•	••••	MLRA 1)	•	
_ , 0	n Sulfide (A4)		Loamy Gleyed	. ,			Other (Explain in Remarks)	
	Below Dark Surface	(A11)	Depleted Matrix	. ,			2	
	rk Surface (A12)		Redox Dark Su	. ,			<sup>3</sup> Indicators of hydrophytic vegetation and	
	ucky Mineral (S1)		Depleted Dark		7)		wetland hydrology must be present,	
	leyed Matrix (S4)		Redox Depress	ions (F8)			unless disturbed or problematic.	
Restrictive	Layer (if present):							
Туре:			-					
Depth (in	ches):		_				Hydric Soil Present? Yes 🗌 No 🛛	
Remarks: So	oils become very com	pact beg	inning at 8 inches					
HYDROLO	GY							

heck all that apply)	Secondary Indicators (2 or mo	re required)
Surface Water (A1) Water-Stained Leaves (B9) (exception) (B9) (exception)		
1, 2, 4A, and 4B)	4A, and 4B)	
Salt Crust (B11)	Drainage Patterns (B10)	
Aquatic Invertebrates (B13)	Dry-Season Water Table (	C2)
Hydrogen Sulfide Odor (C1)	Saturation Visible on Aeria	I Imagery (C9)
Oxidized Rhizospheres along Livir	Roots (C3) 🔲 Geomorphic Position (D2)	
Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)	
Recent Iron Reduction in Tilled Sc	s (C6) FAC-Neutral Test (D5)	
Stunted or Stressed Plants (D1) (I	(D6) (RA) Raised Ant Mounds (D6)	LRR A)
Other (Explain in Remarks)	Frost-Heave Hummocks (I	)7)
Depth (inches):		
Depth (inches):		
· · · · · · · · · · · · · · · · · · ·		No 🖂
oring well, aerial photos, previous inspec	ons), if available:	
	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 Soils         Stunted or Stressed Plants (D1) (LR         Other (Explain in Remarks)         Depth (inches):         Depth (inches):         Depth (inches):	Water-Stained Leaves (B9) (except MLRA       Water-Stained Leaves (B9)         1, 2, 4A, and 4B)       4A, and 4B)         Salt Crust (B11)       Drainage Patterns (B10)         Aquatic Invertebrates (B13)       Dry-Season Water Table (I         Hydrogen Sulfide Odor (C1)       Saturation Visible on Aeria         Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (I         Other (Explain in Remarks)       Frost-Heave Hummocks (I

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

Project/Site: City of Seattle Meyers Way Remainder Property Cit	ty/County: Seattle Sampli	ng Date: <u>05/03/2011</u>
Applicant/Owner: City of Seattle	State: WA Sampli	ng Point: <u>UPL-20</u>
Investigator(s): E. Pritchard, J. Merriman, C. Wright	Section, Township, Range: <u>S5, T23N, R4EW</u>	N
Landform (hillslope, terrace, etc.): flat	ocal relief (concave, convex, none): concave	Slope (%): <u>2</u>
Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47.30.5	57 Long: <u>122.20.01</u>	Datum: unknown
Soil Map Unit Name: NRCS Soil Unit is Unavailable	NWI classification: upla	and
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 distur	bed? Are "Normal Circumstances" present? Y	es 🖾 No 🗌
Are Vegetation, Soil, or Hydrology naturally problema	tic? (If needed, explain any answers in Remark	(S.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locations, transects, impor	tant features, etc.

Hydrophytic Vegetation Present?	Yes 🛛 No 🗌	Is the Sampled Area	
Hydric Soil Present?	Yes 🔲 No 🖂	within a Wetland?	Yes 🗍 No 🖂
Wetland Hydrology Present?	Yes 🗌 No 🛛		
Remarks: March and April 2011 have be	een unseasonably rainy with 169%	of normal rainfall for the two me	onths combined. This amounts to 4.42

additional inches of precipitation during March and April.

Recent cutting of vegetation within Seattle City Light utility corridor, but vegetation has started to re-grow, therefore, normal circumstances still present.

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

	Absolute		Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5m</u> ) 1	<u>% Cover</u>	Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u>	(A)
2 3				Total Number of Dominant Species Across All Strata: 4	(B)
4					(=)
Sapling/Shrub Stratum (Plot size: 3m)		= Total C		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
1. Populus balsamifera	20	Y	FAC	Prevalence Index worksheet:	
2. Salix sitchensis		Y	FACW	Total % Cover of:Multiply by:	
3. Rubus armeniacus				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C		FACU species x 4 =	
Herb Stratum (Plot size: <u>1.5m</u> )				UPL species x 5 =	
1. Cardimine oligosperma	<u>10</u>	<u>Y</u>	FAC	Column Totals: (A)	(B)
2. <u>Holcus lanatus</u>	<u>10</u>	<u>Y</u>	FAC		
3. Equisetum arvense	5	N	FAC	Prevalence Index = B/A =	
4. Epilobium ciliatum	5	N	FAC	Hydrophytic Vegetation Indicators:	
5				□ 1 - Rapid Test for Hydrophytic Vegetation	
6				☑ 2 - Dominance Test is >50%	
7				□ 3 - Prevalence Index is $\leq 3.0^1$	
8				4 - Morphological Adaptations <sup>1</sup> (Provide su data in Remarks or on a separate shee	
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10				Problematic Hydrophytic Vegetation <sup>1</sup> (Expla	ain)
11		= Total C		<sup>1</sup> Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic.	must
Woody Vine Stratum (Plot size: 3m)				be present, unless disturbed of problematic.	
1				Hudrophytic	
2				Hydrophytic Vegetation	
% Bare Ground in Herb Stratum 70	0	= Total C	over	Present? Yes 🛛 No 🗌	
Remarks:					

Profile Dos	cription: (Doscrik	o to the	donth n	and and to docu	mont the ir	dicator	orcon	irm th	o abso	nce of indicators.)
			depth h				or com	IIIII UI	ie abse	nce of indicators.)
Depth (inches)	Matrix Color (moist)	%	Cole	r (moist)	x Features %	Type <sup>1</sup>	Loc <sup>2</sup>	те	exture	Remarks
0-9	10YR 3/2	100							andy loa	
9-23+	2.5Y 4/2	100							amy sa	
0 20	2.01 //2								uniy ou	
										·
<sup>1</sup> Type: $C=C$	oncentration, D=D	enletion	RM=Rec	duced Matrix C	S=Covered	or Coate	d Sand	Grain	is.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
21	Indicators: (App							Grain		cators for Problematic Hydric Soils <sup>3</sup> :
Histosol				Sandy Redox (S		,				2 cm Muck (A10)
	pipedon (A2)			Stripped Matrix						Red Parent Material (TF2)
Black Hi	stic (A3)			Loamy Mucky N		(except	MLRA	1)		/ery Shallow Dark Surface (TF12)
_ , 0	n Sulfide (A4)			Loamy Gleyed I						Other (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		Depleted Matrix Redox Dark Sul	( )				<sup>3</sup> Indi	cators of hydrophytic vegetation and
	ark Surface (A12) lucky Mineral (S1)			Depleted Dark Su		.)				retland hydrology must be present,
-	Bleyed Matrix (S4)			Redox Depress		)				nless disturbed or problematic.
	Layer (if present)	:		•	( )					
Туре:										
Depth (in	ches):							H	Hydric	Soil Present? Yes 🗌 No 🖂
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	cators (minimum o	f one req	uired; ch	eck all that appl	v)				<u></u> S	econdary Indicators (2 or more required)
Surface	Water (A1)			□ Water-Stai	ned Leaves	s (B9) ( <b>e</b> )	cept N	ILRA		] Water-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	iter Table (A2)				A, and 4B)					4A, and 4B)
Saturatio	on (A3)			Salt Crust	(B11)					] Drainage Patterns (B10)
Water M	arks (B1)			Aquatic Inv	vertebrates	(B13)				] Dry-Season Water Table (C2)
🛛 Sedimer	nt Deposits (B2)			Hydrogen	Sulfide Odd	or (C1)				3 Saturation Visible on Aerial Imagery (C9)
🛛 Drift Dep	oosits (B3)			Oxidized F	Rhizosphere	es along l	Living F	Roots (0	C3)	] Geomorphic Position (D2)
Algal Ma	at or Crust (B4)			Presence	of Reduced	Iron (C4	)			] Shallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iro	n Reductio	n in Tillec	d Soils (	C6)		] FAC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or			1) ( <b>LRR</b>	<b>A</b> )		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria			Other (Exp	lain in Rem	narks)				Frost-Heave Hummocks (D7)
	Vegetated Conca	ve Surfac	ce (B8)				·			
Field Obser										
Surface Wat		Yes 🗌	No 🖂	Depth (inches						
Water Table		Yes 🗌	No 🖂	Depth (inches						
Saturation P	resent?	Yes 🗌	No 🖂	Depth (inches	s):		W	etland	d Hydro	logy Present? Yes 🗌 No 🖾

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

Remarks: Use best professional judgement to determine that area does not meet wetland hydrology criteria. Depression appears to be an infiltration facility and infiltrates water very quickly. Given the puddled water areas that are widespread throughout the site, and the absence of saturation or groudwater within 23 inches of the surface, the area is not likely to be saturated to the surface or inundated for sufficient duration during the growing season to meet the wetland definition.

# **APPENDIX B**

Washington Department of Ecology Wetland Rating Forms for Western Washington

## WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland 1 Date of site visit: 04/29/11 Rated by Emmett Pritchard Trained by Ecology? Yes X No Date of training Oct. 2007 SEC: 32 TWNSHP: 24N RNGE: 4E Is S/T/R in Appendix D? Yes No X Map of wetland unit: Figure  $\frac{6 \& 7}{2}$  Estimated size  $\frac{0.25 \text{ ac.}}{2}$ **SUMMARY OF RATING Category based on FUNCTIONS provided by wetland** I II IIIX IV Score for Water Quality Functions 6 Category I = Score  $\geq =70$ Score for Hydrologic Functions 10 Category II = Score 51-69Category III = Score 30-50 Score for Habitat Functions 19 Category IV = Score < 30**TOTAL score for Functions** 35 **Category based on SPECIAL CHARACTERISTICS of wetland** I II Does not Apply X Ш Final Category (choose the "highest" category from above) Summary of basic information about the wetland unit Wetland Unit has Special Wetland HGM Class Characteristics used for Rating Depressional Estuarine Natural Heritage Wetland Riverine Bog Lake-fringe **Mature Forest** Х Slope **Old Growth Forest** Flats

**Coastal Lagoon** 

None of the above

Interdunal

1

Х

**Freshwater Tidal** 

Check if unit has multiple

HGM classes present

# Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
<ul><li>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</li><li>For the purposes of this rating system, "documented" means the wetland is on the</li></ul>		x
<ul> <li>appropriate state or federal database.</li> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		x
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		х
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		х

# To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

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

# **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is **Tidal Fringe** 

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

**2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

roundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3

NO - go to 4

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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
      - YES The wetland class is Lake-fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - X The wetland is on a slope (*slope can be very gradual*),
  - X The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - X The water leaves the wetland **without being impounded**?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually

<3ft digmeter and less than 1 foot deep).

NO - go to 5 **YES** – The wetland class is **Slope** 

An approx. 500 s. f. area is impounded at the outlet (bird-cage stormwater drain), but this area is less than 10% of the total area of the wetland and does not qualify as an HGM class because of its small size.

- 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 two years.

*NOTE*: The riverine unit can contain depressions that are filled with water when the river is

NO - go to 6 **YES** – The wetland class is **Riverine** 

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the* interior of the wetland.

NO - go to 7 Y

# 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 clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit:Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)Slope is 1% - 2%X Slope is 2% - 5%Slope is greater than 5%	1
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES = 3 pointsX NO = 0 points	
S	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3 Dense, woody, vegetation &gt; ½ of area points = 1 Dense, uncut, herbaceous vegetation &gt; 1/4 of area points = 1 Dense not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons     </li> </ul>	Figure
S	Total for S 1Add the points in the boxes above	3
S	<ul> <li>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</li> <li>Grazing in the wetland or within 150ft X Untreated stormwater discharges to wetland — Tilled fields, logging, or orchards within 150 feet of wetland</li> </ul>	(see p.67)
	<ul> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> <li>X YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier 2
S	TOTAL - Water Quality FunctionsMultiply the score from S1 by S2Add score to table on p. 1	6

S	Slope Wetlands	Points (only 1 score
	HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S S	<ul> <li>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually &gt; 1/8in), or dense enough, to remain erect during surface flows)</li> <li>Dense, uncut, rigid vegetation covers &gt; 90% of the area of the wetland. points = 6</li> <li>X Dense, uncut, rigid vegetation &gt; 1/2 area of wetland points = 3</li> <li>Dense, uncut, rigid vegetation &gt; 1/4 area points = 1</li> <li>More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0</li> <li>S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area.</li> </ul>	3
S	10% of its area.X YES points = 2 NO Add the points in the boxes above	5
S	<b>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</b> Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i>	(see p. 70)
	<ul> <li>Wetland has surface runoff that drains to a river or stream that has flooding problems</li> <li>Other</li> <li>(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)</li> <li>X YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	10

Comments

<i>These questions apply to wetlands of all</i> HABITAT FUNCTIONS - Indicators that unit		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potentia	<u>l</u> to provide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as class is ¼ acre or more than 10% of the area is Aquatic bed Aquatic bed A	defined by Cowardin)- Size thres if unit is smaller than 2.5 acres. >30% cover) % cover) a (canopy, sub-canopy, shrubs, he	hold for each	Figure
Add the number of vegetation structures that qua Map of Cowardin vegetation classes	<i>dify. If you have:</i> 4 structures or more 3 structures X 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperiod regime has to cover more than 10% of the weth descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, Seasonally flowing stream in, or adjace Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types present 3 types present 2 types present X1 type present , or adjacent to, the wetland	for t points = 3 points = 2 point = 1 points = 0	Figure
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the weth of the same species can be combined to meet You do not have to name the species. Do not include Eurasian Milfoil, reed can If you counter List species below if you want to:	the size threshold) narygrass, purple loosestrife, Ca		1



H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 <u>Buffers</u> (see p. 80)	Figure
<i>Choose the description that best represents condition of buffer of wetland unit. The highest scoring</i>	
criterion that applies to the wetland is to be used in the rating. See text for definition of	
"undisturbed."	
<ul> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5</li> </ul>	4
$\frac{100 \text{ m} (330 \text{ ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water } }{50\% \text{ circumference.}}$	
- 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	
circumference. Points = 4	
-100  m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water $> 25%$	
circumference, . Points = 3	
- 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >	
50% circumference. <b>Points = 3</b>	
If buffer does not meet any of the criteria above	
— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95%	
circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b>	
— No paved areas or buildings within 50m of wetland for >50% circumference.	
Light to moderate grazing, or lawns are OK. $Points = 2$	
— Heavy grazing in buffer. Points = 1	
— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled	
fields, paving, basalt bedrock extend to edge of wetland $Points = 0$ .	
— Buffer does not meet any of the criteria above. <b>Points = 1</b>	
Aerial photo showing buffers	
H 2.2 Corridors and Connections (see p. 81)	
H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest	
or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed	
uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel	
roads, paved roads, are considered breaks in the corridor).	
$YES = 4 \text{ points} (go to H 2.3) \qquad NO = go to H 2.2.2$	
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or	
forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25	
acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in	2
the question above?	2
<b>X</b> YES = <b>2 points</b> (go to $H 2.3$ ) NO = H 2.2.3	
H 2.2.3 Is the wetland:	
within 5 mi (8km) of a brackish or salt water estuary OR	
within 3 mi of a large field or pasture (>40 acres) OR	
within 1 mi of a lake greater than 20 acres?	
YES = 1 point   NO = 0 points	

Total for page 6

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

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland within ½ mile points = 3</li> <li>There is at least 1 wetland within ½ mile. points = 0</li> </ul>	5
<b>H 2</b> . TOTAL Score - opportunity for providing habitat <i>Add the scores from H2.1,H2.2, H2.3, H2.4</i>	14
TOTAL for H 1 from page 14	5
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	19

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands <i>(see p. 86)</i>	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> </ul>	
With a salinity greater than 0.5 ppt.   YES = Go to SC 1.1  NO X	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II	Cat. I
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant	Cat. II
species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual	Dual
rating (I/II). The area of Spartina would be rated a Category II while the	rating
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	I/II
— At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of	
shrub, forest, or un-grazed or un-mowed grassland.	
<ul> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	

SC 2.0 Natural Heritage Wetlands (see p. 87)         Natural Heritage wetlands have been identified by the Washington Natural Heritage         Program/DNR as either high quality undisturbed wetlands or wetlands that support         state Threatened, Endangered, or Sensitive plant species.         SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a         Natural Heritage wetland? (this question is used to screen out most sites         before you need to contact WNHP/DNR)         S/T/R information from Appendix D or accessed from WNHP/DNR web site	Cat. I
YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	1
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 X No - Is not a bog for purpose of rating	
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I

<b>SC 4.0 Forested Wetlands</b> <i>(see p. 90)</i> Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes</i> <i>you will still need to rate the wetland based on its functions.</i>	
<ul> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> </ul>	
NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	
YES = Category I NO $\underline{X}$ not a forested wetland with special characteristics	Cat. I
SC 5.0 Wetlands in Coastal Lagoons <i>(see p. 91)</i>	
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	
<ul> <li>The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon <i>(needs to be measured near the bottom)</i></li> <li>YES = Go to SC 5.1 NO X not a wetland in a coastal lagoon</li> </ul>	
SC 5.1 Does the wetland meets all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
— At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of	
shrub, forest, or un-grazed or un-mowed grassland.	Cat. I
— The wetland is larger than 1/10 acre (4350 square feet) YES = Category I NO = Category II	Cat. II

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its	
functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>	
Grayland-Westport- lands west of SR 105	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
YES = Category III	Cat. III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record on	
<i>p. 1.</i>	
If you answered NO for all types enter "Not Applicable" on p.1	

## WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland 2 Date of site visit: 05/06/11 Rated by Emmett Pritchard Trained by Ecology? Yes X No Date of training Oct. 2007 SEC: 06 TWNSHP: 23N RNGE: 4E Is S/T/R in Appendix D? Yes No X Map of wetland unit: Figure 6 & 7 Estimated size 0.75 ac. **SUMMARY OF RATING Category based on FUNCTIONS provided by wetland** I II IIIX IV Score for Water Quality Functions 4 Category I = Score  $\geq =70$ Score for Hydrologic Functions 10 Category II = Score 51-69Category III = Score 30-50 Score for Habitat Functions 16 Category IV = Score < 30**TOTAL score for Functions** 30 **Category based on SPECIAL CHARACTERISTICS of wetland** I II Does not Apply X Ш **Final Category** (choose the "highest" category from above) Summary of basic information about the wetland unit Wetland Unit has Special Wetland HGM Class Characteristics used for Rating Depressional Estuarine Natural Heritage Wetland Riverine Bog Lake-fringe Mature Forest Х

**Old Growth Forest** 

**Coastal Lagoon** 

None of the above

Interdunal

Х

Slope

Flats

**Freshwater Tidal** 

Check if unit has multiple

HGM classes present

# Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
<ul> <li>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the</li> </ul>		х
<ul> <li>appropriate state or federal database.</li> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		x
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		х

# To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

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

# **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO - go to 2YES – the wetland class is Tidal Fringe

It yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

**2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

coundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3

NO - go to 4

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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - Least 30% of the open water area is deeper than 6.6 ft (2 m)?
      - **YES** The wetland class is **Lake-fringe** (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - X The wetland is on a slope (*slope can be very gradual*),
  - X The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without  $X^1$  distinct banks.
  - The water leaves the wetland **without being impounded**?
    - 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
    - <3ft diameter and less than 1 food
  - NO go to 5 **YES** The wetland class is **Slope**

- 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 two years.

*NOTE*: The riverine unit can contain depressions that are filled with water when the river is

NO - go to 6 **YES** – The wetland class is **Riverine** 

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.* 

NO - go to 7 YE

# 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 clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

S       S 1.1 Characteristics of average slope of unit: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)       points = 3 points = 2       0         S       Slope is 1% - 2%       points = 1 points = 0       0         S       Slope is 2% - 5%       points       0         S       Slope is 2% - 5%       points = 0       0         S       S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)       0         YES = 3 points       X NO = 0 points       0         S       S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (> 75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation > 1/2 of area       points = 0         Dense, uncut, herbaceous vegetation > 1/2 of area       points = 1       Does not meet any of the criteria above for vegetation points in the boxes above       2         S       S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?       Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland do therwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any sing	S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft       points = 3       0         Slope is 1% - 2%       points = 1       points = 0         Slope is 2% - 5%       points = 0       0         S       S1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)       0         YES = 3 points       X NO = 0 points       0         S       S1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation > 1/2 of area points = 1       2         Dense, uncut, herbaceous vegetation > 1/2 of area points = 1       points = 1         Does not meet any of the criteria above for vegetation polygons       2         S       S2. Does the wetland unit have the opportunity to improve water quality?       (see p.         Answer YES if you know or belive there are pollutants in groundwater osurface water coming into the wetland or within 150ft       (untreated stormwater discharges to wetland         M       Untreated stormwater discharges to wetland       —       Title fields, logging, or orchards within 150 feet of wetland         M       Mawer YES if you know or belive there are water for the following conditions provide the sources of pollutants. A unit	S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
definitions) YES = 3 points       X NO = 0 points       0         S       S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation > 1/2 of area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 1 Does not meet any of the criteria above for vegetation points = 1 Does not meet any of the criteria above for vegetation points in the boxes above       2         S       S. Does the wetland unit have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.       multip         —       Grazing in the wetland or within 150ft       X       Untreated stormwater discharges to wetland         —       Tilled fields, logging, or orchards within 150 feet of wetland       multip         2       NO       multiplier is 1	S	Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)points = 3 points = 2 Slope is 1% - 2%Slope is 1% - 2% Slope is 2% - 5%points = 1	0
S       Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation > 1/2 of area points = 3       2         S       Dense, woody, vegetation > ½ of area points = 1       points = 1         Does not meet any of the criteria above for vegetation points = 0       Aerial photo or map with vegetation polygons       2         S       Total for S 1       Add the points in the boxes above       2         S       S 2. Does the wetland unit have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.       — Grazing in the wetland or within 150ft         X       Untreated stormwater discharges to wetland       — Tilled fields, logging, or orchards within 150 feet of wetland       multip         2       YES multiplier is 2       NO multiplier is 1       100 multiplier is 1	S	definitions)	0
S       S 2. Does the wetland unit have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.       (see p.         —       —       Grazing in the wetland or within 150ft       Image: Comparison of the following conditions or control of the following conditions of the following conditions of the following conditions of the following conditions of the sources, but any single source would qualify as opportunity.       —       Grazing in the wetland or within 150ft       Image: Comparison of the following conditions or control of the following conditions of the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.       Image: Comparison of the following conditions of the following	S	<ul> <li>Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3</li> <li>X Dense, woody, vegetation &gt; 1/2 of area points = 1 Does not meet any of the criteria above for vegetation points = 0</li> </ul>	
Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.         —       Grazing in the wetland or within 150ft         X       Untreated stormwater discharges to wetland         —       Tilled fields, logging, or orchards within 150 feet of wetland         —       Residential, urban areas, or golf courses are within 150 ft upslope of wetland         —       Other         YES       NO         multiplier is 2       NO         Mo       multiplier is 1	S	Total for S 1Add the points in the boxes above	2
X       Untreated stormwater discharges to wetland       multip         —       Tilled fields, logging, or orchards within 150 feet of wetland       multip         —       Residential, urban areas, or golf courses are within 150 ft upslope of wetland       multip         —       Other       2         YES       multiplier is 2       NO       multiplier is 1	S	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several</i>	
		<ul> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> </ul>	multiplier
S 101AL - Water Quality Functions Multiply the score from \$1 by \$2 Add score to table on p. 1	S	TOTAL - Water Quality FunctionsMultiply the score from S1 by S2Add score to table on p. 1	4

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	<ul> <li>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. <i>Choose the points appropriate for the description that best fit conditions in the wetland.</i> <i>(stems of plants should be thick enough (usually &gt; 1/8in), or dense enough, to remain</i> <i>erect during surface flows)</i> Dense, uncut, <b>rigid</b> vegetation covers &gt; 90% of the area of the wetland. <b>X</b> Dense, uncut, <b>rigid</b> vegetation &gt; 1/2 area of wetland Dense, uncut, <b>rigid</b> vegetation &gt; 1/4 area More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0</li> </ul>	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. X YES points = 2 NO points = 0	2
S	Add the points in the boxes above	5
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i></li> <li>X Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>	
	problems — Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) X YES multiplier is 2 NO multiplier is 1	multiplier <u>2</u>
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	10

Comments

<i>These questions apply to wetlands of all HG</i> HABITAT FUNCTIONS - Indicators that unit function		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the <u>potential</u> to pr	ovide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as defined class is ¼ acre or more than 10% of the area if unit i Aquatic bed Emergent plants X Scrub/shrub (areas where shrubs have >30%	d by Cowardin)- Size thres is smaller than 2.5 acres.		Figure
X       Forested (areas where trees have >30% cover)         If the unit has a forested class check if:         X         The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon         Add the number of vegetation structures that qualify. If you have:         4 structures or more       points = 4			
Map of Cowardin vegetation classes X	<ul><li>3 structures</li><li>2 structures</li><li>1 structure</li></ul>	points = 4 $points = 2$ $points = 1$ $points = 0$	
H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) pro- regime has to cover more than 10% of the wetland or descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Qccasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adju- Seasonally flowing stream in, or adjacent to, the Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types presen 3 types present 2 types present X1 type present acent to, the wetland	for t points = 3 points = 2 point = 1 points = 0	Figure
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland the of the same species can be combined to meet the size You do not have to name the species. Do not include Eurasian Milfoil, reed canaryground If you counted: List species below if you want to:	at cover at least 10 ft <sup>2</sup> . ( <i>di</i> <i>e threshold</i> )	fferent patches	1



<b>1 2. Does the wetland unit have the opportunity t</b>	······································	Figuro
2.1 <u>Buffers</u> (see p. 80) hoose the description that best represents condition of a		Figure _
iterion that applies to the wetland is to be used in the r	ating. See text for definition of	
undisturbed."		
— 100 m (330ft) of relatively undisturbed vegetated	d areas, rocky areas, or open water >95%	
of circumference. No structures are within the u		
X undisturbed also means no-grazing, no landscapi	ing, no daily human use) <b>Points = 5</b>	1
$\stackrel{\mathbf{\Lambda}}{-}$ 100 m (330 ft) of relatively undisturbed vegetate	ed areas, rocky areas, or open water >	4
50% circumference.	Points = 4	
— 50 m (170ft) of relatively undisturbed vegetated	l areas, rocky areas, or open water >95%	
circumference.	Points = 4	
— 100 m (330ft) of relatively undisturbed vegetated	d areas, rocky areas, or open water $> 25\%$	
circumference, .	Points = 3	
— 50 m (170ft) of relatively undisturbed vegetated		
50% circumference.	Points = 3	
If buffer does not meet any o		
<ul> <li>— No paved areas (except paved trails) or buildings</li> </ul>		
circumference. Light to moderate grazing, or law		
<ul> <li>No paved areas or buildings within 50m of wetla</li> <li>Light to medarate grazing or lowns are OK</li> </ul>		
Light to moderate grazing, or lawns are OK.	Points = 2	
— Heavy grazing in buffer.	Points = 1	
- Vegetated buffers are $<2m$ wide (6.6ft) for more		
fields, paving, basalt bedrock extend to edge of v		
— Buffer does not meet any of the criteria above.	Points = 1	
	al photo showing buffers	
H 2.2 <u>Corridors and Connections</u> (see p. 81)		
H 2.2.1 Is the wetland part of a relatively undisturb	•	
(either riparian or upland) that is at least 150 ft wid		
or native undisturbed prairie, that connects to estua		
uplands that are at least 250 acres in size? ( <i>dams in</i>		
roads, paved roads, are considered breaks in the c $VES = 4$ points (see to $H^{2}$ 2)		
YES = 4  points  (go  to  H 2.3)	NO = go to H 2.2.2	
H 2.2.2 Is the wetland part of a relatively undisturb		
(either riparian or upland) that is at least 50ft wide,		
forest, and connects to estuaries, other wetlands or		
acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it doe	es not nave an undisturbed corridor as in	2
the question above? $X_{VES} = 2 \text{ points} (a_2 + b_1 + b_2 + b_2)$	NO - H 2 2 2	
X YES = 2 points (go to $H 2.3$ )	NO = H 2.2.3	
H 2.2.3 Is the wetland: (21) $(21)$		
within 5 mi (8km) of a brackish or salt wate		
within 3 mi of a large field or pasture (>40 a		
within 1 mi of a lake greater than 20 acres?		
YES = 1 point	NO = 0 points	

Total for page 6
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in	
the PHS report http://wdfw.wa.gov/hab/phslist.htm )	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
<b>Biodiversity Areas and Corridors</b> : Areas of habitat that are relatively important to various	
species of native fish and wildlife ( <i>full descriptions in WDFW PHS report p. 152</i> ).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree	
species, forming a multi-layered canopy with occasional small openings; with at least 20	
trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands	
with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%;	
crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of	
large downed material is generally less than that found in old-growth; 80 - 200 years old	
west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component is important (full descriptions in WDFW PHS	
<i>report p. 158</i> ).	
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	0
form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	-
<b>Instream:</b> The combination of physical, biological, and chemical processes and conditions	
that interact to provide functional life history requirements for instream fish and wildlife	
resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore,	
Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the	
definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in	
Appendix A).	
<b>Caves:</b> A naturally occurring cavity, recess, void, or system of interconnected passages under	
the earth in soils, rock, ice, or other geological formations and is large enough to contain a	
human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
<b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient	
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a	
diameter at breast height of $> 51$ cm (20 in) in western Washington and are $> 2$ m (6.5 ft) in	
height. Priority logs are $> 30$ cm (12 in) in diameter at the largest end, and $> 6$ m (20 ft)	
long.	
If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point $X$ No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this	
list. Nearby wetlands are addressed in question H 2.4)	

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. X points = 5</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland within ½ mile points = 3</li> <li>There is at least 1 wetland within ½ mile. points = 0</li> </ul>	5	
<b>H 2</b> . TOTAL Score - opportunity for providing habitat <i>Add the scores from H2.1,H2.2, H2.3, H2.4</i>		
TOTAL for H 1 from page 14	5	
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1		

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands <i>(see p. 86)</i>	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> </ul>	
With a salinity greater than 0.5 ppt.   YES = Go to SC 1.1  NO X	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II	Cat. I
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant	Cat. II
species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual	Dual
rating (I/II). The area of Spartina would be rated a Category II while the	rating
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	I/II
<ul> <li>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.</li> </ul>	
<ul> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	

SC 2.0 Natural Heritage Wetlands (see p. 87)         Natural Heritage wetlands have been identified by the Washington Natural Heritage         Program/DNR as either high quality undisturbed wetlands or wetlands that support         state Threatened, Endangered, or Sensitive plant species.         SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a         Natural Heritage wetland? (this question is used to screen out most sites         before you need to contact WNHP/DNR)         S/T/R information from Appendix D or accessed from WNHP/DNR web site         YES contact WNHP/DNR (see p. 79) and go to SC 2.2	Cat. I
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 X No - Is not a bog for purpose of rating	
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I

<ul> <li>SC 4.0 Forested Wetlands (see p. 90)</li> <li>Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its functions.</li> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> <li>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</li> <li>Mature forests: (west of the Cascade Crest) Stands where the largest trees are</li> </ul>	
<ul> <li>the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></li> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> <li>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</li> </ul>	
<ul> <li>you will still need to rate the wetland based on its functions.</li> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> <li>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</li> </ul>	
<ul> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> <li>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</li> </ul>	
forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
<ul> <li>trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> <li>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</li> </ul>	
diameter at breast height (dbh) of 32 inches (81 cm) or more. NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
so old-growth forests do not necessarily have to have trees of this diameter.	
so old-growth forests do not necessarily have to have trees of this diameter.	
— Mature forests: (west of the Cascade Crest) Stands where the largest trees are	
— Mature Infests. (West of the Caseauc Crest) Stands where the largest needs are	
80 – 200 years old OR have average diameters (dbh) exceeding 21 inches	
(53cm); crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found	
in old-growth.	
Cat I	
$\underline{\text{YES} = \text{Category I}} \qquad \text{NO } \underline{X} \text{ not a forested wetland with special characteristics}}$	
SC 5.0 Wetlands in Coastal Lagoons <i>(see p. 91)</i>	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly	
or partially separated from marine waters by sandbanks, gravel banks,	
shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains surface water that is	
saline or brackish (> 0.5 ppt) during most of the year in at least a portion	
of the lagoon (needs to be measured near the bottom)	
YES = Go to SC 5.1 NO $X$ not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meets all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling,	
cultivation, grazing), and has less than 20% cover of invasive plant	
species (see list of invasive species on p. 74).	
— At least <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.	t. I
— The wetland is larger than $1/10$ acre (4350 square feet)	
YES = Category I NO = Category II Cat	t. II

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its	
functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>	
Grayland-Westport- lands west of SR 105	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
YES = Category III	Cat. III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record on	
<i>p.</i> 1.	
If you answered NO for all types enter "Not Applicable" on p.1	

#### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland 3 \_\_\_\_\_ Date of site visit: 05/06/11 Rated by Emmett Pritchard Trained by Ecology? Yes X No Date of training Oct. 2007 SEC: 05 TWNSHP: 23N RNGE: 4E Is S/T/R in Appendix D? Yes No X Map of wetland unit: Figure 6 & 7 Estimated size 1.5 ac. **SUMMARY OF RATING Category based on FUNCTIONS provided by wetland** I II IIIX IV Score for Water Quality Functions 6 Category I = Score  $\geq =70$ Score for Hydrologic Functions 10 Category II = Score 51-69Category III = Score 30-50 Score for Habitat Functions 16 Category IV = Score < 30**TOTAL score for Functions** 32 **Category based on SPECIAL CHARACTERISTICS of wetland** I II Does not Apply X Ш Final Category (choose the "highest" category from above) Summary of basic information about the wetland unit Wetland Unit has Special Wetland HGM Class Characteristics used for Rating Depressional Estuarine Natural Heritage Wetland Riverine Bog Lake-fringe **Mature Forest** Х Slope **Old Growth Forest** Flats

**Coastal Lagoon** 

None of the above

Interdunal



Х

1

**Freshwater Tidal** 

Check if unit has multiple

#### Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
<ul> <li>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the</li> </ul>		х
<ul> <li>appropriate state or federal database.</li> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		x
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		х

# To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

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

### **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is **Tidal Fringe** 

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

**2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

roundwater 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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (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?
  - X The wetland is on a slope (*slope can be very gradual*),
  - X The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
  - X The water leaves the wetland **without being impounded**?
    - NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually
    - <3ft diameter and less than 1 foot deep)
  - NO go to 5 **YES** The wetland class is **Slope**

channel and area of 2-yr. return overbank flow, WL3 This is too small to qualify as an HGM class. Wetland name or number 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 two years. *NOTE: The riverine unit can contain depressions that are filled with water when the river is* YES – The wetland class is **Riverine** NO - go to 6 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 n of the wetland. NO - go to 7**YES** – The wetland class is **Depressional** 7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet NO - go to 8**YES** – The wetland class is **Depressional** 

An approx. 1,500 s. f. area is within a stream

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

S	<b>Slope Wetlands</b> WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)	
S	improve water quality S 1. Does the wetland unit have the <u>potential</u> to improve water quality?		
S	S 1.1 Characteristics of average slope of unit:Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)Slope is 1% - 2%X Slope is 2% - 5%Slope is greater than 5%	1	
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES = 3 pointsX NO = 0 points	0	
S	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3</li> <li>X Dense, woody, vegetation &gt; 1/2 of area points = 1 Dense, uncut, herbaceous vegetation &gt; 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons</li> </ul>		
S	Total for S 1Add the points in the boxes above	3	
S	<b>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</b> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>		
	<ul> <li>Grazing in the wetland or within 150ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier	
S	TOTAL - Water Quality FunctionsMultiply the score from S1 by S2Add score to table on p. 1	6	
I	Comments		

S	<b>Slope Wetlands</b> HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to			
	reduce flooding and stream erosion         S 3. Does the wetland unit have the potential to reduce flooding and stream erosion?			
S	<ul> <li>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually &gt; 1/8in), or dense enough, to remain erect during surface flows)</li> <li>Dense, uncut, rigid vegetation covers &gt; 90% of the area of the wetland. points = 6</li> <li>X Dense, uncut, rigid vegetation &gt; 1/2 area of wetland points = 3</li> <li>Dense, uncut, rigid vegetation &gt; 1/4 area points = 1</li> <li>More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0</li> </ul>	3		
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. X YES points = 2 NO points = 0			
S	Add the points in the boxes above			
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i></li> <li>X Wetland has surface runoff that drains to a river or stream that has flooding</li> </ul>			
	problems — Other	multiplier		
	<ul> <li>(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>			
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	10		

<i>These questions apply to wetlands of all</i> HABITAT FUNCTIONS - Indicators that unit f		: habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential	to provide habitat for many	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as a class is ¼ acre or more than 10% of the area ig Aquatic bed Aquatic bed 	defined by Cowardin)- Size thres f unit is smaller than 2.5 acres. >30% cover) 6 cover) a (canopy, sub-canopy, shrubs, he r 20% within the forested polygo	hold for each erbaceous, n	Figure
Map of Cowardin vegetation classes	4 structures or more 3 structures X 2 structures 1 structure	points = 4 $points = 2$ $points = 1$ $points = 0$	
H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperio regime has to cover more than 10% of the weth descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, Seasonally flowing stream in, or adjacen Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types present 3 types present 2 types present X1 type present or adjacent to, the wetland	for t points = 3 points = 2 point = 1 points = 0	Figure
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the weth of the same species can be combined to meet to You do not have to name the species. Do not include Eurasian Milfoil, reed can If you counted List species below if you want to:	the size threshold) parygrass, purple loosestrife, Ca		2



H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers (see p. 80)	Figure
Choose the description that best represents condition of buffer of wetland unit. The highest scoring	• <u> </u>
criterion that applies to the wetland is to be used in the rating. See text for definition of	
"undisturbed."	
— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	
of circumference. No structures are within the undisturbed part of buffer. (relatively	
undisturbed also means no-grazing, no landscaping, no daily human use) <b>Points = 5</b>	
— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >	1
50% circumference. <b>Points = 4</b>	
- 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	
circumference. Points = $4$	
- 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25%	
circumference, . Points = $3$	
— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >	
= 50%  in (1700) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3	
If buffer does not meet any of the criteria above	
— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95%	
circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b>	
- No paved areas or buildings within 50m of wetland for >50% circumference.	
- Heavy grazing in buffer. Points = 1	
<ul> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled</li> <li>Solda maxima has the advantage of mattered</li> </ul>	
$X  \text{fields, paving, basalt bedrock extend to edge of wetland} \qquad Points = 0.$	
$\frac{X}{E} = 0.$ Buffer does not meet any of the criteria above. Points = 0. Points = 1	
Aerial photo showing bullers	
H 2.2 <u>Corridors and Connections</u> (see p. 81)	
H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest	
or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? ( <i>dams in riparian corridors, heavily used gravel</i>	
roads, paved roads, are considered breaks in the corridor).	
$YES = 4 \text{ points} (go to H 2.3) \qquad NO = go to H 2.2.2$	
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or	
forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25	
acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not have an undisturbed corridor as in	
the question above?	2
XYES = 2  points  (go  to  H 2.3)  NO = H 2.2.3	
H 2.2.3 Is the wetland: $(g0 t0 H 2.3)$	
within 5 mi (8km) of a brackish or salt water estuary OR	
within 3 mi of a large field or pasture (>40 acres) OR	
within 1 mi of a lake greater than 20 acres?	
YES = 1  point  NO = 0 points	
	<b> </b>

Total for page 3

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

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</li> <li>X There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</li> <li>There are at least 1 wetland within ½ mile. points = 2</li> <li>There are no wetlands within ½ mile. points = 0</li> </ul>	3
<b>H 2</b> . TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	10
TOTAL for H 1 from page 14	6
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	16

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands <i>(see p. 86)</i>	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> </ul>	
With a salinity greater than 0.5 ppt.   YES = Go to SC 1.1  NO X	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II	Cat. I
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant	Cat. II
species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual	Dual
rating (I/II). The area of Spartina would be rated a Category II while the	
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	
<ul> <li>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.</li> </ul>	
<ul> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	

2. YES = Category I No Is not a bog for purpose of rating	Cat. I
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ul> <li>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?</li> </ul>	
<ul> <li>2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?</li> <li>Yes - go to Q. 3 X No - Is not a bog for purpose of rating</li> </ul>	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
<b>SC 3.0 Bogs (see p. 87)</b> Does the wetland unit ( <b>or any part of the unit</b> ) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	
YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO $\underline{X}$	
<ul> <li>SC 2.0 Natural Heritage Wetlands (see p. 87)</li> <li>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</li> <li>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)</li> <li>S/T/R information from Appendix D or accessed from WNHP/DNR web site</li> </ul>	Cat. I

SC 4.0 Forested Wetlands (see p. 90)		
Does the wetland unit have at least 1 acre of forest that meet one of these criteria for		
the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes</i>		
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/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.		
NOTE: The criterion for dbh is based on measurements for upland forests.		
Two-hundred year old trees in wetlands will often have a smaller dbh		
because their growth rates are often slower. The DFW criterion is and "OR"		
so old-growth forests do not necessarily have to have trees of this diameter.		
— Mature forests: (west of the Cascade Crest) Stands where the largest trees are		
80 – 200 years old OR have average diameters (dbh) exceeding 21 inches		
(53cm); crown cover may be less that 100%; decay, decadence, numbers of		
snags, and quantity of large downed material is generally less than that found		
in old-growth.	Cat. I	
$YES = Category I \qquad NO \underline{X} not a forested wetland with special characteristics$		
SC 5.0 Wetlands in Coastal Lagoons <i>(see p. 91)</i>		
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?		
— The wetland lies in a depression adjacent to marine waters that is wholly		
or partially separated from marine waters by sandbanks, gravel banks,		
shingle, or, less frequently, rocks		
— The lagoon in which the wetland is located contains surface water that is		
saline or brackish (> $0.5$ ppt) during most of the year in at least a portion		
of the lagoon (needs to be measured near the bottom)		
$YES = Go \text{ to } SC 5.1 \qquad NO \underline{X} \text{ not a wetland in a coastal lagoon}$		
SC 5.1 Deep the wetland meets all of the fellowing three ear ditions?		
SC 5.1 Does the wetland meets all of the following three conditions?		
— The wetland is relatively undisturbed (has no diking, ditching, filling,		
cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).		
- At least <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.	Cat. I	
— The wetland is larger than 1/10 acre (4350 square feet)		
$YES = Category I \qquad NO = Category II$		

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>		
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland		
Ownership or WBUO)?		
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating		
If you answer yes you will still need to rate the wetland based on its		
functions.		
In practical terms that means the following geographic areas:		
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>		
Grayland-Westport- lands west of SR 105		
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>		
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?		
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II	
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?		
YES = Category III	Cat. III	
Category of wetland based on Special Characteristics		
Choose the "highest" rating if wetland falls into several categories, and record on		
<i>p. 1.</i>		
If you answered NO for all types enter "Not Applicable" on p.1		

#### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland 4 Date of site visit: 05/06/11 Rated by Emmett Pritchard Trained by Ecology? Yes X No Date of training Oct. 2007 SEC: 05 TWNSHP: 23N RNGE: 4E Is S/T/R in Appendix D? Yes No X Map of wetland unit: Figure  $\frac{6 \& 7}{2}$  Estimated size 0.25 ac.SUMMARY OF RATING **Category based on FUNCTIONS provided by wetland** I II IIIX IV Score for Water Quality Functions 6 Category I = Score  $\geq =70$ Score for Hydrologic Functions 10 Category II = Score 51-69Category III = Score 30-50 Score for Habitat Functions 16 Category IV = Score < 30**TOTAL score for Functions** 32 **Category based on SPECIAL CHARACTERISTICS of wetland** I II Does not Apply X Ш **Final Category** (choose the "highest" category from above) Summary of basic information about the wetland unit Wetland Unit has Special Wetland HGM Class Characteristics used for Rating Estuarine Depressional Natural Heritage Wetland Riverine Bog Lake-fringe **Mature Forest** Х Slope **Old Growth Forest** Flats

**Coastal Lagoon** 

None of the above

Interdunal

Х

**Freshwater Tidal** 

Check if unit has multiple

HGM classes present

### Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)		NO
<ul> <li>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the</li> </ul>		х
<ul> <li>appropriate state or federal database.</li> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		x
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		х

# To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

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

### **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO - go to 2YES – the wetland class is Tidal Fringe

It yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

**2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

coundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3

NO - go to 4

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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - t least 30% of the open water area is deeper than 6.6 ft (2 m)?
      - **YES** The wetland class is **Lake-fringe** (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - X The wetland is on a slope (*slope can be very gradual*),
  - X The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without  $X^1$  distinct banks.
  - The water leaves the wetland **without being impounded**?
    - 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
    - <3ft diameter and less than 1 food
  - NO go to 5 **YES** The wetland class is **Slope**



YES – The wetland class is Depressional

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

S	<b>Slope Wetlands</b> WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)		
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?			
S	S 1.1 Characteristics of average slope of unit:Slope is1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)Slope is 1% - 2%Slope is 2% - 5%X Slope is greater than 5%	0		
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES = 3 pointsX NO = 0 points	0		
S	<ul> <li>S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation &gt; 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 3 Dense, uncut, herbaceous vegetation &gt; 1/2 of area points = 1 Dense, uncut, herbaceous vegetation &gt; 1/4 of area points = 1 Dense not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons     </li> </ul>			
S	Total for S 1Add the points in the boxes above	3		
S	<ul> <li>S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</li> <li>         — Grazing in the wetland or within 150ft     </li> </ul>			
	<ul> <li>X Untreated stormwater discharges to wetland</li> <li>Tilled fields, logging, or orchards within 150 feet of wetland</li> <li>Residential, urban areas, or golf courses are within 150 ft upslope of wetland</li> <li>Other</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>			
S	TOTAL - Water Quality FunctionsMultiply the score from S1 by S2Add score to table on p. 1	6		

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)		
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?			
S	<ul> <li>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually &gt; 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers &gt; 90% of the area of the wetland. points = 6 X Dense, uncut, rigid vegetation &gt; 1/2 area of wetland points = 3 Dense, uncut, rigid vegetation &gt; 1/4 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0     </li> </ul>			
	The slope wetland has small surface depressions that can retain water over at least 10% of its area. X YES points = 2 NO points = 0			
S	Add the points in the boxes above	5		
S	<ul> <li>S 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply.</i></li> <li>X Wetland has surface runoff that drains to a river or stream that has flooding problems</li> </ul>			
	— Other	multiplier		
	<ul> <li>(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>	2		
S	<b>TOTAL - Hydrologic Functions</b> Multiply the score from S 3 by S 4 Add score to table on p. 1	10		

Map of Cowardin vegetation classes       3 s         X 2 s       1 s         H 1.2. Hydroperiods (see p. 73)       5         Check the types of water regimes (hydroperiods) present regime has to cover more than 10% of the wetland or ¼ as descriptions of hydroperiods)       4         Permanently flooded or inundated       4         Seasonally flooded or inundated       4         Coccasionally flooded or inundated       4         Permanently flowing stream or river in, or adjacent       5	Cowardin)- Size thresh aller than 2.5 acres. r) ub-canopy, shrubs, her in the forested polygor have: tructures or more structures structures tructures	$ \begin{array}{l} \text{points} = 4 \\ \text{points} = 1 \\ \text{points} = 0 \end{array} $	Figure
Check the types of vegetation classes present (as defined by C class is ¼ acre or more than 10% of the area if unit is sma Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have >30% cover K Forested (areas where trees have >30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, s moss/ground-cover) that each cover 20% within Add the number of vegetation structures that qualify. If your 4 st Map of Cowardin vegetation classes H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperiods) present regime has to cover more than 10% of the wetland or ¼ ac descriptions of hydroperiods) Permanently flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent	r) ub-canopy, shrubs, her in the forested polygor <i>have:</i> tructures or more structures structures tructures tructure	rbaceous, points = 4 points = 2 points = 1 points = 0	1
Scrub/shrub (areas where shrubs have >30% cover X Forested (areas where trees have >30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, s moss/ground-cover) that each cover 20% withit Add the number of vegetation structures that qualify. If you it 4 st Map of Cowardin vegetation classes X 2 s 1 s H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperiods) present regime has to cover more than 10% of the wetland or ¼ and descriptions of hydroperiods) Permanently flooded or inundated Coccasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent	ub-canopy, shrubs, her in the forested polygor <i>have:</i> tructures or more structures structures tructures tructure	points = 4 points = 2 points = 1 points = 0	
Add the number of vegetation structures that qualify. If you 4         Map of Cowardin vegetation classes       3         Map of Cowardin vegetation classes       3         X 2       1         H 1.2. Hydroperiods (see p. 73)       6         Check the types of water regimes (hydroperiods) present regime has to cover more than 10% of the wetland or ¼ at descriptions of hydroperiods)         Permanently flooded or inundated       4         Occasionally flooded or inundated       4         Permanently flooded or inundated       4         Permanently flooded or inundated       6         Permanently flooded or inundated       6         Permanently flooded or inundated       6         Map of council provides       6         Map of Cowardin vegetation classes       7         Map of Cowardin vegetatin vegetatin vegetation classes       7	have: tructures or more structures structures tructure within the wetland. T	points = 4 points = 2 points = 1 points = 0	Figuro
H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperiods) present regime has to cover more than 10% of the wetland or ¼ as descriptions of hydroperiods) Permanently flooded or inundated 4 Seasonally flooded or inundated Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent	within the wetland. T	1	Figuro
regime has to cover more than 10% of the wetland or <sup>1</sup> / <sub>4</sub> and descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent		-1	i iguie
Seasonally flowing stream in, or adjacent to, the we Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	or more types present 3 types present 2 types present X1 type present to, the wetland	points = 3 points = 2 point = 1 points = 0	0
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cor of the same species can be combined to meet the size three You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, p If you counted: List species below if you want to:	eshold) purple loosestrife, Can > 19 species X 5 - 19 species		1



H 2. Does the wetland unit have the opportunity to provide habitat for many species?				
H 2.1 <u>Buffers</u> (see p. 80)				
Choose the description that best represents condition of buffer	of wetland unit. The highest scoring	Figure		
criterion that applies to the wetland is to be used in the rating. See text for definition of				
"undisturbed."				
— 100 m (330ft) of relatively undisturbed vegetated areas	rocky areas, or open water >95%			
of circumference. No structures are within the undistu	•			
undisturbed also means no-grazing, no landscaping, no				
— 100 m (330 ft) of relatively undisturbed vegetated areas	-	2		
50% circumference.	Points = 4			
— 50 m (170ft) of relatively undisturbed vegetated areas,				
circumference.	Points = 4			
— 100 m (330ft) of relatively undisturbed vegetated areas				
circumference, .	Points = 3			
— 50 m (170ft) of relatively undisturbed vegetated areas,				
50% circumference.	Points = $3$			
If buffer does not meet any of the c				
<ul> <li>— No paved areas (except paved trails) or buildings within</li> </ul>				
circumference. Light to moderate grazing, or lawns are				
$\mathbf{X}$ No paved areas or buildings within 50m of wetland for	>50% circumference			
-  No paved areas of buildings within 50m of we failed for >50% circumference. Light to moderate grazing, or lawns are OK. <b>Points = 2</b>				
<ul> <li>Heavy grazing in buffer.</li> <li>Heavy grazing in buffer.</li> </ul>				
<ul> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 9</li> </ul>				
fields, paving, basalt bedrock extend to edge of wetland				
<ul> <li>Buffer does not meet any of the criteria above.</li> </ul>	Points = 1			
•	o showing buffers			
H 2.2 Corridors and Connections (see p. 81)				
H $\overline{2.2.1}$ Is the wetland part of a relatively undisturbed and	unbroken vegetated corridor			
(either riparian or upland) that is at least 150 ft wide, has				
or native undisturbed prairie, that connects to estuaries, o	her wetlands or undisturbed			
uplands that are at least 250 acres in size? (dams in ripar	ian corridors, heavily used gravel			
roads, paved roads, are considered breaks in the corridor	<i>·</i> ).			
YES = 4 points (go to H 2.3)	NO = go to H 2.2.2			
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor				
(either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or				
forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25				
acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in				
the question above?		2		
<b>X</b> YES = <b>2</b> points (go to $H 2.3$ )	NO = H 2.2.3			
H 2.2.3 Is the wetland:				
within 5 mi (8km) of a brackish or salt water estua	•			
within 3 mi of a large field or pasture (>40 acres)	OR			
within 1 mi of a lake greater than 20 acres?				
YES = 1 point	NO = 0 points			

Total for page 4

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in	
the PHS report <u>http://wdfw.wa.gov/hab/phslist.htm</u> )	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various	
species of native fish and wildlife ( <i>full descriptions in WDFW PHS report p. 152</i> ).	
Herbaceous Belds: Variable size patches of grass and forbs on shallow soils over bedrock.	
<b>Cold-growth Mature forests:</b> (Old-growth west of Cascade crest) Stands of at least 2 tree	
species, forming a multi-fayered canopy with occasional small openings; with at least 20	
trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands	
with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%;	
crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of	
large downed material is generally less than that found in old-growth; 80 - 200 years old	
west of the Cascade crest.	
<b>Oregon white Oak:</b> Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component is important ( <i>full descriptions in WDFW PHS</i>	
report n 158)	
X <b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the	4
form of a dry prairie or a wet prairie ( <i>full descriptions in WDFW PHS report p. 161</i> ).	т
X 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.	
<b>Nearshore</b> : Relatively undisturbed nearshore habitats. These include Coastal Nearshore,	
Open Coast Nearshore, and Puget Sound Nearshore. ( <i>full descriptions of habitats and the</i>	
definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in	
Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under	
the earth in soils, rock, ice, or other geological formations and is large enough to contain a	
human.	
<b>Cliffs:</b> Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
<b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient	
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a	
diameter at breast height of $> 51$ cm (20 in) in western Washington and are $> 2$ m (6.5 ft) in	
height. Priority logs are $> 30$ cm (12 in) in diameter at the largest end, and $> 6$ m (20 ft)	
long.	
If wetland has <b>3 or more</b> priority habitats = <b>4 points</b>	
X If we than $1 \text{ as } 2$ priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this	
list. Nearby wetlands are addressed in question H 2.4)	

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile. points = 3</li> <li>There are no wetlands within ½ mile. points = 0</li> </ul>	3
<b>H 2</b> . TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	11
TOTAL for H 1 from page 14	5
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	16

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> <li>With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X</li> </ul>	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
<ul> <li>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</li> <li>The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.</li> <li>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.</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	Cat. I Cat. II Dual rating I/II

SC 2.0 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR) S/T/R information from Appendix D or accessed from WNHP/DNR web site	Cat. I
YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 X No - Is not a bog for purpose of rating	
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I

SC 4.0 Forested Wetlands (see p. 90)         Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>Ifyou answer yes you will still need to rate the wetland based on its functions.</i> — 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/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.         NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.         — Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.       Cat. I         YES = Category 1       NO X not a forested 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       Cat. I         SC 5.0 Vectlands in Coastal Lagoons (see p. 91)       Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?       —         The lagoon in which the wetland is located contains surface wat		
<ul> <li>you will still need to rate the wetland based on its functions.</li> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> <li>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</li> <li>Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have a varage diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%, decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.</li> <li>YES = Category I NO X not a forested wetland with special characteristics</li> <li>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</li> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</li> <li>YES = Go to SC 5.1 No X not a wetland in a coastal lagoon</li> <li>SC 5.1 Does the wetland meets all of the following three conditions?</li> <li>The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</li> <li>At least ¼ of the landward edge of the wetla</li></ul>		
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Two-hundred year old trees in wetlands will often have a smaller dbh       because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.         - Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.       Cat. I         YES = Category I       NO X not a forested wetland with special characteristics       Cat. I         SC 5.0 Wetlands in Coastal Lagoons (see p. 91)       Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?       Cat. I         - The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks       The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 pt) during most of the year in at least a portion of the lagoon ( <i>meeds to be measured near the bottom</i> )         YES = Go to SC 5.1       NOX not a wetland in a coastal lagoon         SC 5.1 Does the wetland meets all of the following three conditions?       The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).         At least ½ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.       Cat. I   <	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/acre (20 trees/hectare) that are at least 200 years of age OR have a	
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shrub, forest, or un-grazed or un-mowed grassland. Cat. I	— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
— The webally is larger than 1/10 acre (4550 square feet)	shrub, forest, or un-grazed or un-mowed grassland.	Cat. I
YES = Category I NO = Category II Cat. II		Cat. II

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its	
functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>	
• Grayland-Westport- lands west of SR 105	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
YES = Category III	Cat. III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record on	
<i>p. 1.</i>	
If you answered NO for all types enter "Not Applicable" on p.1	
#### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30 Score for Water Quality Functions Score for Hydrologic Functions Score for Habitat Functions **TOTAL score for Functions** 

0	
4	
19	
23	

# Category based on SPECIAL CHARACTERISTICS of wetland

I\_\_\_\_ II\_\_\_ Does not Apply X\_\_\_\_

**Final Category** (choose the "highest" category from above)



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

1

#### Summary of basic information about the wetland unit

### Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
<ul> <li>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.</li> </ul>		Х
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed</li> <li>Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		x
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		х

# To complete the next part of the data sheet you will need to determine the *Hydrogeomorphic Class of the wetland being rated.*

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

## **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is **Tidal Fringe** 

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

**2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

roundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

NO - go to 4

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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
      - 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**?
      - 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 3ft diameter and less than 1 foot deep).

NO - go to 5 **YES** – The wetland class is **Slope** 

- 5. Does the entire wetland unit meet all of the following criteria?
  - $\mathbf{X}$  The unit is in a valley, or stream channel, where it gets inundated by overbank
  - $\checkmark$  flooding from that stream or river
  - X The overbank flooding occurs at least once every two years.

NOTE: The riverine unit can contain depressions that are filled with water when the river is

NO - go to 6 **YES** – The wetland class is **Riverine** 

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.* 

NO – go to 7 **YES** – The wetland class is **Depressional** 

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet

YES – The wetland class is Depressional

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

R	<b>Riverine and Freshwater Tidal Fringe Wetlands</b> WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	Points (only 1 score per box)
R	<b>R 1.</b> Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.52)
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments	Figure
	during a flooding event:points = 8Depressions cover >3/4 area of wetlandpoints = 8Depressions cover > 1/2 area of wetlandpoints = 4If depressions > $\frac{1}{2}$ of area of unit draw polygons on aerial photo or mapDepressions present but cover < 1/2 area of wetlandpoints = 2X No depressions presentpoints = 0	0
R	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height): Trees or shrubs > 2/3 the area of the unit points = 8 Trees or shrubs > 1/3 area of the unit Ungrazed, herbaceous plants > 2/3 area of unit Ungrazed herbaceous plants > 1/3 area of unit points = 3 X Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit points = 0 Aerial photo or map showing polygons of different vegetation types	Figure ()
R	Add the points in the boxes above	0
R	<b>`</b>	
R	<b><u>TOTAL</u></b> - Water Quality Functions Multiply the score from R 1 by R 2	0
	Add score to table on p. 1	_

Comments

R	<b>Riverine and Freshwater Tidal Fringe Wetlands</b> HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	Points (only 1 score per box)
	R 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	(see p.54)
R	R 3.1 Characteristics of the overbank storage the unit provides: Estimate the average width of the wetland unit perpendicular to the direction of the	Figure
	<pre>flow and the width of the stream or river channel (distance between banks). Calculate the ratio: ( average width of unit)/( average width of stream between banks). If the ratio is more than 20     for the ratio is between 10 - 20     for the ratio is 5 - &lt;10         X If the ratio is 1 - &lt;5         If the ratio is &lt;1         Aerial photo or map showing average widths </pre>	2
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat	Figure
	large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes): Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area points = 7 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4 X Vegetation does not meet above criteria points = 0 Aerial photo or map showing polygons of different vegetation types	0
R	Add the points in the boxes above	2
R	<ul> <li>R 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply.</li> <li>X There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding.</li> </ul>	(see p.57)
	<ul> <li>There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding</li> </ul>	
	<ul> <li>Other</li> <li>(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)</li> <li>YES multiplier is 2 NO multiplier is 1</li> </ul>	multiplier 2
R	<b>TOTAL - Hydrologic Functions</b> Multiply the score from R 3 by R 4 Add score to table on p. 1	4

Comments

<b>These questions apply to wetlands of all</b> HABITAT FUNCTIONS - Indicators that unit a		t habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the <u>potential</u>	to provide habitat for many	y species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as a class is ¼ acre or more than 10% of the area if Aquatic bed X Emergent plants X Scrub/shrub (areas where shrubs have = Forested (areas where trees have >30% If the unit has a forested class check if: The forested class has 3 out of 5 strata	defined by Cowardin)- Size thres f unit is smaller than 2.5 acres. >30% cover) 6 cover)	hold for each	Figure
Add the number of vegetation structures that qual Map of Cowardin vegetation classes	r 20% within the forested polygo		
H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperior regime has to cover more than 10% of the weth descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Saturated only Seasonally flowing stream or river in, Seasonally flowing stream in, or adjacen Lake-fringe wetland = 2 points	4 or more types present 3 types present X 2 types present 1 type present or adjacent to, the wetland nt to, the wetland	The water for t points = 3 points = 2 point = 1 points = 0	Figure
Freshwater tidal wetland = 2 points H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetl of the same species can be combined to meet You do not have to name the species. Do not include Eurasian Milfoil, reed can If you counted List species below if you want to:	the size threshold) harygrass, purple loosestrife, Ca	fferent patches	1



H 2. Does the wetland unit have the opportunity t	o provide habitat for many species?	
H 2.1 <u>Buffers</u> (see p. 80)		Figure
Choose the description that best represents condition of l	ouffer of wetland unit. The highest scoring	
criterion that applies to the wetland is to be used in the re		
"undisturbed."		
<ul> <li>— 100 m (330ft) of relatively undisturbed vegetated of circumference. No structures are within the u undisturbed also means no-grazing, no landscapin</li> </ul>	ndisturbed part of buffer. (relatively ng, no daily human use) <b>Points = 5</b>	4
$\sim$ 100 m (330 ft) of relatively undisturbed vegetated		
50% circumference.	Points = 4	
- 50 m (170ft) of relatively undisturbed vegetated		
circumference.	Points = 4	
<ul> <li>— 100 m (330ft) of relatively undisturbed vegetated</li> </ul>	-	
circumference, .	Points = 3	
— 50 m (170ft) of relatively undisturbed vegetated	areas, rocky areas, or open water for >	
50% circumference.	Points = 3	
If buffer does not meet any of	f the criteria above	
— No paved areas (except paved trails) or buildings	within 25 m (80ft) of wetland $> 95\%$	
circumference. Light to moderate grazing, or law	Points = 2	
— No paved areas or buildings within 50m of wetla		
Light to moderate grazing, or lawns are OK.	Points = 2	
— Heavy grazing in buffer.	Points = 1	
<ul> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more</li> </ul>		
fields, paving, basalt bedrock extend to edge of w		
<ul> <li>Buffer does not meet any of the criteria above.</li> </ul>	Points = $1$	
-	al photo showing buffers	
H 2.2 Corridors and Connections (see p. 81)		
H 2.2.1 Is the wetland part of a relatively undisturb	ed and unbroken vegetated corridor	
(either riparian or upland) that is at least 150 ft wide		
or native undisturbed prairie, that connects to estua		
uplands that are at least 250 acres in size? ( <i>dams in</i>		
roads, paved roads, are considered breaks in the co		
YES = 4  points (go to H 2.3)	NO = go to H 2.2.2	
H 2.2.2 Is the wetland part of a relatively undisturb		
(either riparian or upland) that is at least 50ft wide,		
forest, and connects to estuaries, other wetlands or		
acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does		
the question above?		2
$\mathbf{X}  \text{YES} = 2 \text{ points } (go \text{ to } H \text{ 2.3})$	NO = H 2.2.3	
H 2.2.3 Is the wetland:		
within 5 mi (8km) of a brackish or salt water	r estuary OR	
within 3 mi of a large field or pasture (>40 a	•	
within 1 mi of a lake greater than 20 acres?		
YES = 1  point	NO = 0 points	
		1

Total for page 6

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

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile</li> <li>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile</li> <li>There is at least 1 wetland within ½ mile.</li> <li>There are no wetlands within ½ mile.</li> </ul>	5
<b>H 2</b> . TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	14
TOTAL for H 1 from page 14	5
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	19

## **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> <li>With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X</li> </ul>	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
<ul> <li>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</li> <li>The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.</li> <li>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.</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	Cat. I Cat. II Dual rating I/II

SC 2.0 Natural Heritage Wetlands (see p. 87)         Natural Heritage wetlands have been identified by the Washington Natural Heritage         Program/DNR as either high quality undisturbed wetlands or wetlands that support         state Threatened, Endangered, or Sensitive plant species.         SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a         Natural Heritage wetland? (this question is used to screen out most sites         before you need to contact WNHP/DNR)         S/T/R information from Appendix D or accessed from WNHP/DNR web site         YES contact WNHP/DNR (see p. 79) and go to SC 2.2	Cat. I
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 X No - Is not a bog for purpose of rating	
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I

SC 4.0 Forested Wetlands <i>(see p. 90)</i>	
Does the wetland unit have at least 1 acre of forest that meet one of these criteria for	
the Department of Fish and Wildlife's forests as priority habitats? If you answer yes	
you will still need to rate the wetland based on its 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/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at hereast height (dhb) of 22 inches (81 cm) or more	
diameter at breast height (dbh) of 32 inches (81 cm) or more.	
NOTE: The criterion for dbh is based on measurements for upland forests.	
Two-hundred year old trees in wetlands will often have a smaller dbh	
because their growth rates are often slower. The DFW criterion is and "OR"	
so old-growth forests do not necessarily have to have trees of this diameter.	
— Mature forests: (west of the Cascade Crest) Stands where the largest trees are	
80 – 200 years old OR have average diameters (dbh) exceeding 21 inches	
(53cm); crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found	
in old-growth.	Cat. I
YES = Category I NO $\underline{X}$ not a forested wetland with special characteristics	Cal. I
SC 5.0 Wetlands in Coastal Lagoons <i>(see p. 91)</i>	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly	
or partially separated from marine waters by sandbanks, gravel banks,	
shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains surface water that is	
saline or brackish ( $> 0.5$ ppt) during most of the year in at least a portion	
of the lagoon (needs to be measured near the bottom)	
$YES = Go \text{ to } SC 5.1 \qquad NO \underline{X} \text{ not a wetland in a coastal lagoon}$	
SC 5.1 Does the wetland meets all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling,	
cultivation, grazing), and has less than 20% cover of invasive plant spacies (see list of invasive spacies on $p_{1}$ , 74).	
species (see list of invasive species on p. 74). At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of	
<ul> <li>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.</li> </ul>	Cat I
— The wetland is larger than 1/10 acre (4350 square feet)	Cat. I
$YES = Category I \qquad NO = Category II$	Cat. II
1 Lo - Category I = NO - Category II	Cuti 11

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its	
functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>	
<ul> <li>Grayland-Westport- lands west of SR 105</li> </ul>	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
YES = Category III	Cat. III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record on	
<i>p.</i> 1.	
If you answered NO for all types enter "Not Applicable" on p.1	

#### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): WL Off-site 1 Date of site visit: 05/09/11 Rated by Emmett Pritchard Trained by Ecology? Yes X No Date of training Oct. 2007 SEC: 31 TWNSHP: 24N RNGE: 4E Is S/T/R in Appendix D? Yes No X Map of wetland unit: Figure <u>7</u> Estimated size <sup>0.25 ac.</sup> SUMMARY OF RATING **Category based on FUNCTIONS provided by wetland** I II X III IV Score for Water Quality Functions 22 Category I = Score  $\geq$ =70 Score for Hydrologic Functions 10 Category II = Score 51-69Category III = Score 30-5019 Score for Habitat Functions Category IV = Score < 30**TOTAL score for Functions** 51 **Category based on SPECIAL CHARACTERISTICS of wetland** I II Does not Apply 11 Final Category (choose the "highest" category from above)

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

1

### Summary of basic information about the wetland unit

### Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
<ul> <li>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.</li> </ul>		x
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed</li> <li>Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		x
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		Х
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		Х

# To complete the next part of the data sheet you will need to determine the *Hydrogeomorphic Class of the wetland being rated.*

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

## **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is **Tidal Fringe** 

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

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

NO - go to 4

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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
      - YES The wetland class is Lake-fringe (Lacustrine Fringe)
- 4. Does the entire wetland unit meet all of the following criteria?
  - X The wetland is on a slope (*slope can be very gradual*),
  - X The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
    - \_\_\_\_The water leaves the wetland **without being impounded**?

NO - go to 5 YES – The wetland class is Slope

The wetland is feed by seeps on a slope but also includes three large depressions that encompass approx. 5,000 s. f. One is impounded by topography, the other two are caused by flow control structures. The area of the depressions is greater than 10% of the total wetland area and, therefore qualifies as a depressional HGM class.

- 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 two years.

*NOTE*: The riverine unit can contain depressions that are filled with water when the river is *net flood*ing.

NO - go to 6 YES – The wetland class is **Riverine** 

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland* 

NO – go to 7 **YES** – The wetland class is **Depressional** 

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	<ul> <li>D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3</li> <li>X Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>)</li> </ul>	Figure 2
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)         YES       points = 4         NO       X points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) X Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure 5
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation. This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</li> <li>X Area seasonally ponded is &gt; ½ total area of wetland Area seasonally ponded is &gt; ¼ total area of wetland Area seasonally ponded is &lt; ¼ total area of wetland points = 0 Map of Hydroperiods</li> </ul>	Figure 4
D	Total for D 1Add the points in the boxes above	11
D		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	22

D	<b>Depressional and Flats Wetlands</b> HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D	<ul> <li>D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4</li> <li>X Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</li> </ul>	2
D	D 3.2 Depth of storage during wet periods Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).Marks of ponding are 3 ft or more above the surface or bottom of outlet The wetland is a "headwater" wetland" 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 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap waterX Marks of ponding less than 0.5 ft	0
D	D 3.3 Contribution of wetland unit to storage in the watershedEstimate the ratio of the area of upstream basin contributing surface water to the wetlandto the area of the wetland unit itself.The area of the basin is less than 10 times the area of unitpoints = 5X The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire unit is in the FLATS classpoints = 5	3
D	Total for D 3Add the points in the boxes above	5
D	<ul> <li>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply</i>.</li> <li>Wetland is in a headwater of a river or stream that has flooding problems</li> <li>Wetland drains to a river or stream that has flooding problems</li> <li>Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>	(see p. 49) multiplier
	— Other X YES multiplier is 2 NO multiplier is 1	2
D	TOTAL       - Hydrologic Functions Multiply the score from D 3 by D 4         Add score to table on p. 1	10

<i>These questions apply to wetlands of al</i> HABITAT FUNCTIONS - Indicators that unit		t habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the <u>potentia</u>	<u>ll</u> to provide habitat for man	y species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as class is ¼ acre or more than 10% of the area Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have X Forested (areas where trees have >30% If the unit has a forested class check if:	<i>if unit is smaller than 2.5 acres.</i> >30% cover)	shold for each	Figure
X The forested class has 3 out of 5 strat moss/ground-cover) that each cover Add the number of vegetation structures that quar Map of Cowardin vegetation classes	er 20% within the forested polygo		1
H 1.2. <u>Hydroperiods (see p. 73)</u> Check the types of water regimes (hydroperio		*	Figure
<pre>regime has to cover more than 10% of the wet descriptions of hydroperiods)    </pre>	4 or more types present 3 types present X 2 types present 1 type present , or adjacent to, the wetland	t points = 3 points = 2 point = 1 points = 0	1
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wet of the same species can be combined to meet You do not have to name the species. Do not include Eurasian Milfoil, reed can If you counte List species below if you want to:	t the size threshold) narygrass, purple loosestrife, Ca		1



2 1 Buffars (see n 80)	Figure
<ul> <li>hoose the description that best represents condition of buffer of wetland unit. The highest scoring iterion that applies to the wetland is to be used in the rating. See text for definition of undisturbed."</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5</li> <li>100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt; 50% circumference. Points = 4</li> <li>50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> <li>100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water &gt;95% circumference. Points = 4</li> </ul>	Figure _
X       circumference, .       Points = 3         50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference.       Points = 3         If buffer does not meet any of the criteria above         —       No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK.       Points = 2         —       No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK.       Points = 2         —       No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK.       Points = 2         —       Heavy grazing in buffer.       Points = 1         —       Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland	
H 2.2 <u>Corridors and Connections</u> (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? ( <i>dams in riparian corridors, heavily used gravel</i> roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? X YES = 2 points (go to H 2.3) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR	2

Total for page 5

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

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)         X There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.         points = 5         The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed         points = 3         The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile, BUT the connections between them are disturbed         points = 3         The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe are at least 1 wetland within ½ mile.         points = 2         There are no wetlands within ½ mile.         points = 0	5
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	13
TOTAL for H 1 from page 14	6
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	19

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> <li>With a salinity greater than 0.5 ppt.</li> </ul>	
$YES = Go \text{ to } SC 1.1 \qquad NO \mathbf{X}$	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
<ul> <li>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</li> <li>The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.</li> <li>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.</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	Cat. I Cat. II Dual rating I/II

SC 2.0 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR) S/T/R information from Appendix D or accessed from WNHP/DNR web site	Cat. I
YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO $\underline{X}$	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	
<b>SC 3.0 Bogs (see p. 87)</b> Does the wetland unit ( <b>or any part of the unit</b> ) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 $X$ No - Is not a bog for purpose of rating	
<ul> <li>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?</li> </ul>	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I

SC 4.0 Forested Wetlands (see p. 90)	
Does the wetland unit have at least 1 acre of forest that meet one of these criteria for	
the Department of Fish and Wildlife's forests as priority habitats? If you answer yes	
you will still need to rate the wetland based on its 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/acre (20 trees/hectare) that are at least 200 years of age OR have a	
diameter at breast height (dbh) of 32 inches (81 cm) or more.	
NOTE: The criterion for dbh is based on measurements for upland forests.	
Two-hundred year old trees in wetlands will often have a smaller dbh	
because their growth rates are often slower. The DFW criterion is and "OR"	
so old-growth forests do not necessarily have to have trees of this diameter.	
— Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches	
(53cm); crown cover may be less that 100%; decay, decadence, numbers of	
snags, and quantity of large downed material is generally less than that found in old-growth.	
	Cat. I
$YES = Category I \qquad NO \underline{X} not a forested wetland with special characteristics$	
SC 5.0 Wetlands in Coastal Lagoons <i>(see p. 91)</i>	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly	
or partially separated from marine waters by sandbanks, gravel banks,	
shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains surface water that is	
saline or brackish (> 0.5 ppt) during most of the year in at least a portion	
of the lagoon (needs to be measured near the bottom)	
YES = Go to SC 5.1  NO X not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meets all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling,	
cultivation, grazing), and has less than 20% cover of invasive plant	
species (see list of invasive species on p. 74).	
- At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of	
shrub, forest, or un-grazed or un-mowed grassland.	Cat. I
— The wetland is larger than $1/10$ acre (4350 square feet)	
YES = Category I NO = Category II	Cat. II

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>		
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland		
Ownership or WBUO)?		
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating		
If you answer yes you will still need to rate the wetland based on its		
functions.		
In practical terms that means the following geographic areas:		
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>		
• Grayland-Westport- lands west of SR 105		
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>		
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?		
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II	
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?		
YES = Category III	Cat. III	
Category of wetland based on Special Characteristics		
Choose the "highest" rating if wetland falls into several categories, and record on		
<i>p.</i> 1.		
If you answered NO for all types enter "Not Applicable" on p.1		

#### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

-				
Name of wetland (if known): Wetlan	d Off-site 2	Date of	site visit: <u>04/29</u> /1	1
Rated by Emmett Pritchard	Trained by Ecolog	y? Yes <u>X</u> No	Date of training_	<u>Oct. 2007</u>
SEC: <u>32</u> TWNSHP: <u>24N</u> RNGE: <u>4E</u>	Is S/T/R in Appendix	x D? Yes N	<u>o X</u>	
Map of wetland unit: F	igure <u>7</u> Esti	mated size	.25 ac.	
SUMN	MARY OF RAT	ГING		
Category based on FUNCTIONS	provided by wetla	and		
I II III <u>X</u> IV				
	Score for Wat	er Quality Functi	ons 14	
Category I = Score >=70 Category II = Score 51-69	Score for H	Iydrologic Functi	ions 16	
Category III = Score 30-50	Score f	or Habitat Functi	-	
Category IV = Score $< 30$	TOTAL	score for Functi		
Catagowy based on SDECIAL CIL		<sup>7</sup> S of wotland		
Category based on SPECIAL CH		.5 of wetland		
I II Does not Apply	<u> </u>			_
Final Category (choo	se the "highest" cate	egory from abov	/e)	
Summary of basic i	information about tl	he wetland unit		
Wetland Unit has Special		and HGM Class	5	
Characteristics		ed for Rating		
Estuarine	Depres	sional	X	

Riverine Lake-fringe

Slope

Flats

Х

**Freshwater Tidal** 

Check if unit has multiple

HGM classes present

Natural Heritage Wetland

Bog

**Mature Forest** 

**Coastal Lagoon** 

None of the above

Interdunal

**Old Growth Forest** 

### Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
<ul><li>SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</li><li>For the purposes of this rating system, "documented" means the wetland is on the</li></ul>		x
<ul> <li>appropriate state or federal database.</li> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		x
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		х
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		х

# To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

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

## **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is **Tidal Fringe** 

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

**2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

roundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3

NO - go to 4

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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
      - 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**?
    - 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 1 foot deep).
  - NO go to 5 YES The wetland class is Slope

- 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 two years.

*NOTE*: The riverine unit can contain depressions that are filled with water when the river is not flowling.

NO - go to 6 YES – The wetland class is **Riverine** 

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.* 

NO – go to 7 **YES** – The wetland class is **Depressional** 

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet

NO - go to 8

YES – The wetland class is Depressional

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

WL Off-site 2

Wetland name or number \_\_\_\_\_

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)	
D	D 1.1 Characteristics of surface water flows out of the wetland:         Unit is a depression with no surface water leaving it (no outlet)       points = 3         X Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2       Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1         Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1       (If ditch is not permanently flowing treat unit as "intermittently flowing")         Provide photo or drawing       Provide photo or drawing		
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS definitions)</i> YES points = 4 NO X points = 0	0	
D	<ul> <li>D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation &gt; = 95% of area points = 5</li> <li>Wetland has persistent, ungrazed, vegetation &gt; = 1/2 of area points = 3</li> <li>X Wetland has persistent, ungrazed vegetation &gt; = 1/10 of area points = 1</li> <li>Wetland has persistent, ungrazed vegetation &lt;1/10 of area points = 0</li> <li>Map of Cowardin vegetation classes</li> </ul>	Figure 1	
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out</i> <i>sometime during the year. Do not count the area that is permanently ponded. Estimate</i> <i>area as the average condition 5 out of 10 yrs.</i> X Area seasonally ponded is &gt; ½ total area of wetland Area seasonally ponded is &gt; ¼ total area of wetland Area seasonally ponded is &lt; ¼ total area of wetland points = 0 Map of Hydroperiods</li> </ul>	Figure 4	
D	Total for D 1Add the points in the boxes above	7	
D	D 2. Does the wetland unit have the opportunity to improve water quality?         Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.         — Grazing in the wetland or within 150 ft         — Untreated stormwater discharges to wetland         — Tilled fields or orchards within 150 ft of wetland         — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging         X         Residential, urban areas, golf courses are within 150 ft of wetland         — Wetland is fed by groundwater high in phosphorus or nitrogen         — Other		
D	<b><u>TOTAL</u> - Water Quality Functions</b> Multiply the score from D1 by D2	14	
	Add score to table on p. 1	•••	

Wetland name or number \_\_\_\_\_

D	Depressional and Flats Wetlands	Points	
	HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to	(only 1 score per box)	
	reduce flooding and stream degradation		
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	(see p.46)	
D	<ul> <li>D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)</li> <li>X Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</li> </ul>	2	
D	D 3.2 Depth of storage during wet periodsEstimate the height of ponding above the bottom of the outlet. For units with no outletmeasure from the surface of permanent water or deepest part (if dry).Marks of ponding are 3 ft or more above the surface or bottom of outletpoints = 7The wetland is a "headwater" wetland"points = 5Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap watermarks of ponding less than 0.5 ftpoints = 0	3	
D	D 3.3 Contribution of wetland unit to storage in the watershedEstimate the ratio of the area of upstream basin contributing surface water to the wetlandto the area of the wetland unit itself.The area of the basin is less than 10 times the area of unitpoints = 5X The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire unit is in the FLATS classpoints = 5	3	
D	Total for D 3Add the points in the boxes above	8	
D			
	X YES multiplier is 2 NO multiplier is 1	2	
D	<b>TOTAL - Hydrologic Functions</b> Multiply the score from D 3 by D 4 Add score to table on p. 1	16	
<i>These questions apply to wetlands of al</i> HABITAT FUNCTIONS - Indicators that unit		t habitat	Points (only 1 score per box)
--	--	---	-------------------------------------
H 1. Does the wetland unit have the <u>potentia</u>	<u>ll</u> to provide habitat for many	y species?	
H 1.1 Vegetation structure (see p. 72)		-	Figure
Check the types of vegetation classes present (as class is ¼ acre or more than 10% of the area Aquatic bed 	<i>if unit is smaller than 2.5 acres.</i> >30% cover) % cover) a (canopy, sub-canopy, shrubs, he er 20% within the forested polygo <i>alify. If you have:</i>	erbaceous, n	1
	4 structures or more	points = 4	
Map of Cowardin vegetation classes	3 structures	points = 2	
	X 2 structures 1 structure	points = 1 points = 0	
H 1.2. Hydroperiods <i>(see p. 73)</i>		points – 0	Figure
regime has to cover more than 10% of the wet descriptions of hydroperiods)         X         Permanently flooded or inundated         X         Seasonally flooded or inundated         Occasionally flooded or inundated         Saturated only         Permanently flowing stream or river in         Seasonally flowing stream in, or adjace         Lake-fringe wetland = 2 points         Freshwater tidal wetland = 2 points	4 or more types present 3 types present X2 types present 1 type present , or adjacent to, the wetland	t points = 3 points = 2 point = 1 points = 0	1
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wet of the same species can be combined to meet You do not have to name the species. Do not include Eurasian Milfoil, reed can If you counte List species below if you want to:	t the size threshold) narygrass, purple loosestrife, Ca		1



H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 <u>Buffers</u> (see p. 80)	Figure
Choose the description that best represents condition of buffer of wetland unit. The highest scoring	·
criterion that applies to the wetland is to be used in the rating. See text for definition of	
"undisturbed."	
— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	
of circumference. No structures are within the undisturbed part of buffer. (relatively	
undisturbed also means no-grazing, no landscaping, no daily human use) <b>Points = 5</b>	
— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >	1
50% circumference. Points = $4$	
- 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95%	
circumference. $Points = 4$	
-100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25%	
circumference, . Points = $3$	
- 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >	
50% circumference. <b>Points = 3</b>	
If buffer does not meet any of the criteria above	
— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95%	
circumference. Light to moderate grazing, or lawns are OK. Points = $2$	
<ul> <li>— No paved areas or buildings within 50m of wetland for &gt;50% circumference.</li> </ul>	
Light to moderate grazing, or lawns are OK. Points = $2$	
<ul> <li>Heavy grazing in buffer.</li> <li>Points = 1</li> </ul>	
<ul> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled</li> </ul>	
$\begin{array}{ll} X & \text{fields, paving, basalt bedrock extend to edge of wetland} \\ - & \text{Buffer does not meet any of the criteria above.} \\ \end{array}$	
Aerial photo showing buffers	
H 2.2 Corridors and Connections (see p. 81)	
H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest	
or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed	
uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel	
roads, paved roads, are considered breaks in the corridor).	
YES = 4 points (go to $H 2.3$ ) NO = go to $H 2.2.2$	
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor	
(either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or	
forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25	
acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in	1
the question above?	1
YES = 2 points (go to $H 2.3$ ) NO = H 2.2.3	
H 2.2.3 Is the wetland:	
within 5 mi (8km) of a brackish or salt water estuary OR	
within 3 mi of a large field or pasture (>40 acres) OR	
within 1 mi of a lake greater than 20 acres?	
X YES = 1 point NO = 0 points	

Total for page 2

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

<ul> <li>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</li> <li>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</li> <li>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile</li> <li>X There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</li> <li>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe metland within ½ mile</li> <li>There are at least 1 wetland within ½ mile.</li> </ul>	3
There are no wetlands within $\frac{1}{2}$ mile.points = 0 <b>H 2.</b> TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 14 <b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	5 10

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

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> <li>With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X</li> </ul>	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
<ul> <li>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</li> <li>The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.</li> <li>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.</li> <li>The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	

SC 2.0 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X	Cat. I
YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 X No - Is not a bog for purpose of rating	
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I

<ul> <li>SC 4.0 Forested Wetlands (see p. 90)</li> <li>Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its functions.</li> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> </ul>	
NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	
$YES = Category I \qquad NO X not a forested wetland with special characteristics$	Cat. I
<ul> <li>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</li> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? <ul> <li>The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)</li> <li>YES = Go to SC 5.1</li> </ul> </li> </ul>	
<ul> <li>SC 5.1 Does the wetland meets all of the following three conditions?</li> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</li> <li>— 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.</li> <li>— The wetland is larger than 1/10 acre (4350 square feet)</li> </ul>	Cat. I
	Cat. II

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its	
functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>	
Grayland-Westport- lands west of SR 105	
<ul> <li>Ocean Shores-Copalis- lands west of SR 115 and SR 109</li> </ul>	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
YES = Category III	Cat. III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record on	
<i>p. 1.</i>	
If you answered NO for all types enter "Not Applicable" on p.1	

#### WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

_			
Name of wetland (if known): Wet	land Off-site 3	Date of site vi	isit: <u>04/29</u> /11
Rated by Emmett Pritchard	Trained by Ecology	y? Yes <u>X</u> No Date	e of training <u>Oct.</u> 2007
SEC: <u>32</u> TWNSHP: <u>24N</u> RNGE: <u>4</u> E	Is S/T/R in Appendix	D? Yes No_X	
Map of wetland unit	: Figure <u>7</u> Estin	nated size5 ac.	
SUN	MMARY OF RAT	ING	
Category based on FUNCTION	S provided by wetla	Ind	
I II_X III IV_	_		
Catalogue L. Same S. 70	Score for Wate	er Quality Functions	22
Category I = Score >=70 Category II = Score 51-69	Score for H	ydrologic Functions	16
Category III = Score 30-50	Score fo	or Habitat Functions	13
Category IV = Score < 30	TOTAL s	score for Functions	51
Category based on SPECIAL C	UADACTEDISTIC	'S of wotland	
		S of wettand	
I II Does not Ap			
Final Category (cl	noose the "highest" cate	gory from above)	Ш
Summary of bas	sic information about th	e wetland unit	
Wetland Unit has Spec		and HGM Class	
Characteristics		ed for Rating	
Estuarine	Depress	sional S	X I

Riverine Lake-fringe

Slope

Flats

Х

**Freshwater Tidal** 

Check if unit has multiple

HGM classes present

Natural Heritage Wetland

Bog

**Mature Forest** 

**Coastal Lagoon** 

None of the above

Interdunal

**Old Growth Forest** 

#### Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed</i> <i>Threatened or Endangered</i> <b>animal or plant</b> species ( <i>T/E species</i> )?		x
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
<ul> <li>SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</li> <li>For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).</li> </ul>		X
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

### To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

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

#### **Classification of Wetland Units in Western Washington**

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is **Tidal Fringe** 

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. ).

**2.** The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.

roundwater and surface water runoff are NOT sources of water to the unit.

NO - go to 3

NO - go to 4

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 both** of the following criteria?
  - The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
    - At least 30% of the open water area is deeper than 6.6 ft (2 m)?
      - 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**?
    - 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 1 foot deep).
  - NO go to 5 **YES** The wetland class is **Slope**

- 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 two years.

*NOTE*: The riverine unit can contain depressions that are filled with water when the river is not flowling.

NO - go to 6 YES – The wetland class is **Riverine** 

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.* 

NO – go to 7 **YES** – The wetland class is **Depressional** 

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet

NO - go to 8

YES – The wetland class is Depressional

**8**. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

If you are unable still 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.

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	<b>D</b> 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	D 1.1 Characteristics of surface water flows out of the wetland:         Unit is a depression with no surface water leaving it (no outlet)       points = 3         X Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2       Unit has an unconstricted, or slightly constricted, surface outlet ( <i>permanently flowing</i> ) points = 1         Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch       points = 1         (If ditch is not permanently flowing treat unit as "intermittently flowing")       Provide photo or drawing	
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)         YES         NO         X         points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) X Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure 5
D	<ul> <li>D1.4 Characteristics of seasonal ponding or inundation. This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</li> <li>X Area seasonally ponded is &gt; ½ total area of wetland points = 4 Area seasonally ponded is &gt; ¼ total area of wetland points = 0 Area seasonally ponded is &lt; ¼ total area of wetland points = 0 Map of Hydroperiods</li> </ul>	Figure 4
D	Total for D 1Add the points in the boxes above	11
D	<ul> <li>D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.         <ul> <li>Grazing in the wetland or within 150 ft</li> <li>Untreated stormwater discharges to wetland</li> <li>Tilled fields or orchards within 150 ft of wetland</li> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> <li>X Residential, urban areas, golf courses are within 150 ft of wetland</li> <li>Wetland is fed by groundwater high in phosphorus or nitrogen</li> <li>Other</li> </ul> </li> </ul>	
D	XYES       multiplier is 2       NO       multiplier is 1         TOTAL - Water Quality Functions         Multiply the score from D1 by D2	22
	Add score to table on p. 1	

D	<b>Depressional and Flats Wetlands</b> HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score per box)	
	reduce flooding and stream degradation	(see p.46)	
	<b>D</b> 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		
D	<ul> <li>D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)</li> <li>X Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 4 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (<i>If ditch is not permanently flowing treat unit as "intermittently flowing"</i>) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</li> </ul>	2	
D	D 3.2 Depth of storage during wet periods Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	3	
D	D 3.3 Contribution of wetland unit to storage in the watershedEstimate the ratio of the area of upstream basin contributing surface water to the wetlandto the area of the wetland unit itself.The area of the basin is less than 10 times the area of unitpoints = 5X The area of the basin is 10 to 100 times the area of the unitpoints = 3The area of the basin is more than 100 times the area of the unitpoints = 0Entire unit is in the FLATS classpoints = 5	3	
D	Total for D 3Add the points in the boxes above	8	
D	<ul> <li>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply</i>. Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</li> </ul>		
	— Other X YES multiplier is 2 NO multiplier is 1	2	
D	TOTAL       - Hydrologic Functions Multiply the score from D 3 by D 4         Add score to table on p. 1	16	

<i>These questions apply to wetlands of all</i> HABITAT FUNCTIONS - Indicators that unit fu		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the <u>potential</u>	to provide habitat for many	species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as de class is ¼ acre or more than 10% of the area if Aquatic bed X Emergent plants X Scrub/shrub (areas where shrubs have >	unit is smaller than 2.5 acres.	hold for each	Figure
			1
Map of Cowardin vegetation classes	4 structures or more 3 structures X 2 structures 1 structure	points = 4 $points = 2$ $points = 1$ $points = 0$	
H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiod regime has to cover more than 10% of the wetla descriptions of hydroperiods) Permanently flooded or inundated X Seasonally flooded or inundated X Scasionally flooded or inundated Saturated only Permanently flowing stream or river in, or Seasonally flowing stream in, or adjacent Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points	4 or more types presen X3 types present 2 types present 1 type present or adjacent to, the wetland	for t points = 3 points = 2 point = 1 points = 0	Figure
H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetlar of the same species can be combined to meet th You do not have to name the species. Do not include Eurasian Milfoil, reed cana If you counted: List species below if you want to:	nd that cover at least 10 ft <sup>2</sup> . ( <i>di</i> <i>he size threshold</i> ) <i>arygrass, purple loosestrife, Ca</i>	fferent patches	1



H 2. Does the wetland unit have the opportunity to pro	ovide habitat for many species?	
H 2.1 Buffers <i>(see p. 80)</i>		Figure
Choose the description that best represents condition of buffer	of wetland unit. The highest scoring	
criterion that applies to the wetland is to be used in the rating.		
"undisturbed."		
— 100 m (330ft) of relatively undisturbed vegetated areas	s, rocky areas, or open water >95%	
of circumference. No structures are within the undistu	urbed part of buffer. (relatively	
undisturbed also means no-grazing, no landscaping, no	daily human use) $Points = 5$	1
— 100 m (330 ft) of relatively undisturbed vegetated area	s, rocky areas, or open water >	1
50% circumference.	Points = 4	
— 50 m (170ft) of relatively undisturbed vegetated areas	, rocky areas, or open water >95%	
circumference.	Points = 4	
— 100 m (330ft) of relatively undisturbed vegetated areas	s, rocky areas, or open water $> 25\%$	
circumference, .	Points = 3	
— 50 m (170ft) of relatively undisturbed vegetated areas,	, rocky areas, or open water for >	
50% circumference.	Points = 3	
If buffer does not meet any of the o	criteria above	
— No paved areas (except paved trails) or buildings withi	n 25 m (80ft) of wetland > 95%	
circumference. Light to moderate grazing, or lawns ar	e OK. Points = $2$	
— No paved areas or buildings within 50m of wetland for	·>50% circumference.	
Light to moderate grazing, or lawns are OK.	Points = 2	
— Heavy grazing in buffer.	Points = 1	
— Vegetated buffers are <2m wide (6.6ft) for more than 9	95% of the circumference (e.g. tilled	
$\mathbf{X}$ fields, paving, basalt bedrock extend to edge of wetlan	d $Points = 0.$	
$\stackrel{\frown}{\longrightarrow}$ Buffer does not meet any of the criteria above.	Points = 1	
	to showing buffers	
H 2.2 Corridors and Connections (see p. 81)		
H 2.2.1 Is the wetland part of a relatively undisturbed and	•	
(either riparian or upland) that is at least 150 ft wide, has		
or native undisturbed prairie, that connects to estuaries, o		
uplands that are at least 250 acres in size? (dams in ripat		
roads, paved roads, are considered breaks in the corrido		
YES = 4  points (go to H 2.3)	NO = go to H 2.2.2	
H 2.2.2 Is the wetland part of a relatively undisturbed and		
(either riparian or upland) that is at least 50ft wide, has a found on a set of the set		
forest, and connects to estuaries, other wetlands or undist		
acres in size? <b>OR</b> a <b>Lake-fringe</b> wetland, if it does not h	lave an undisturbed corridor as in	1
•	NO = H 2 2 3	
· · · · · · · · · · · · · · · · · · ·	100 - 112.2.3	
	ary OB	
	•	
	NO = 0 points	
the question above? YES = 2 points (go to H 2.3) H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estua within 3 mi of a large field or pasture (>40 acres) within 1 mi of a lake greater than 20 acres? X YES = 1 point	NO = H 2.2.3 ary OR	

Total for page 2

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

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)         There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.         points = 5         The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile, BUT the connections between them are disturbed         points = 3         The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile         points = 3         There are at least 1 wetland within ½ mile.       points = 2         There are no wetlands within ½ mile.       points = 0	3
<b>H 2</b> . TOTAL Score - opportunity for providing habitat Add the scores from H2.1,H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 14	8
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	13

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

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

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	
SC 1.0 Estuarine wetlands <i>(see p. 86)</i>	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
<ul> <li>The dominant water regime is tidal,</li> <li>Vegetated, and</li> <li>With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO X</li> </ul>	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
<ul> <li>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II</li> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.</li> <li>— 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.</li> <li>— The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</li> </ul>	

SC 2.0 Natural Heritage Wetlands (see p. 87)         Natural Heritage wetlands have been identified by the Washington Natural Heritage         Program/DNR as either high quality undisturbed wetlands or wetlands that support         state Threatened, Endangered, or Sensitive plant species.         SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a         Natural Heritage wetland? (this question is used to screen out most sites         before you need to contact WNHP/DNR)         S/T/R information from Appendix D or accessed from WNHP/DNR web site         YES contact WNHP/DNR (see p. 79) and go to SC 2.2	Cat. I
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NOnot a Heritage Wetland	
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.	
<ol> <li>Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 X No - go to Q. 2</li> </ol>	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 X No - Is not a bog for purpose of rating	
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
<ol> <li>Is the unit forested (&gt; 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (&gt; 30% coverage of the total shrub/herbaceous cover)?</li> </ol>	
2. YES = Category I No Is not a bog for purpose of rating	Cat. I

<ul> <li>SC 4.0 Forested Wetlands (see p. 90)</li> <li>Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its functions.</li> <li>Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</li> </ul>	
NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	
$YES = Category I \qquad NO X not a forested wetland with special characteristics$	Cat. I
SC 5.0 Wetlands in Coastal Lagoons <i>(see p. 91)</i>	
<ul> <li>Does the wetlands in Coastal Lagoons (see p. 91)</li> <li>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</li> <li>— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</li> <li>— The lagoon in which the wetland is located contains surface water that is saline or brackish (&gt; 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)</li> <li>YES = Go to SC 5.1 NOX not a wetland in a coastal lagoon</li> </ul>	
<ul> <li>SC 5.1 Does the wetland meets all of the following three conditions?</li> <li>— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</li> <li>— 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.</li> </ul>	Cat. I
— The wetland is larger than 1/10 acre (4350 square feet)	Cati 1
YES = Category I NO = Category II	Cat. II

SC 6.0 Interdunal Wetlands <i>(see p. 93)</i>	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NO $\underline{X}$ not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its	
functions.	
In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula- lands west of SR 103</li> </ul>	
Grayland-Westport- lands west of SR 105	
• Ocean Shores-Copalis- lands west of SR 115 and SR 109	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
$YES = Category II \qquad NO - go to SC 6.2$	Cat. II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
YES = Category III	Cat. III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record on	
p. 1.	
If you answered NO for all types enter "Not Applicable" on p.1	