EXHIBIT 33



Critical Areas Report

for

Green Mountain PRD Phase 2

City of Camas, Washington

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INTRODUCTION

This critical areas report has been prepared by Ecological Land Services, Inc. (ELS) on behalf of CLB Washington Options Solutions, LLC for Phase 2 of the Green Mountain Planned Residential Development into single-family residential lots with park, trails, and open space (PRD, City File No. SUB14-02). This approximately 85-acre site is located at 2817 NE Ingle Road in the City of Camas, Clark County, Washington. Parcels involved with this report include portions of Clark County Parcel Numbers 173178000, 986037307, 172555000, and 172557000. The study area falls within portions of Sections 17, 20, and 21, Township 2 North, Range 3 East of the Willamette Meridian (Figure 1). This report summarizes the findings of critical areas onsite in accordance with the *City of Camas Municipal Code (CMC) Wetlands Chapter 16.53, Fish and Wildlife Habitat Conservation Areas Chapter 16.61*, and Sensitive Areas and Open Space Chapter 18.31.

METHODOLOGY

ELS methodology follows the U.S. Army Corps of Engineers Routine Determination Method described in the Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (U.S. Army Corps of Engineers 2010). For regulatory purposes under the Clean Water Act (Section 404), the Environmental Protection Agency (EPA) defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (EPA 2014). Wetlands are regulated as "Waters of the United States" by the U.S. Army Corps of Engineers (Corps), as "Waters of the State" by the Washington Department of Ecology (Ecology), and locally by the City of Camas.

ELS biologists conducted site visits on February 29, 2016 and March 1, 2016 to collect vegetation, soils, and hydrology data, and to make determinations about the presence or absence of critical areas onsite. We identified and delineated seven wetlands onsite, identified in this report as Wetlands B, D, G, J, L, M, and O (Figure 2). The letters A, C, E, F, H, I, K, and N were omitted from the numbering scheme. ELS biologists flagged wetland boundaries with consecutively numbered pin flagging or tape flagging labeled "WETLAND BOUNDARY". Vegetation, hydrology, and soil data were collected from thirteen test plots to determine presence or absence of positive wetland boundary delineation. Wetland boundary lines and test plot locations were recorded by ELS using a hand-held Trimble GPS unit capable of sub-meter accuracy.

SITE DESCRIPTION

The majority of the study area is located north of NE Goodwin Road, south of NE 48th Circle (on the southwest slope of Green Mountain), and east of NE Ingles Road (Figures 1 and 2). The former Green Mountain Golf Course, which closed in February 2016, encompasses a large portion of the PRD. The northwestern corner of the PRD is an undeveloped mixed deciduous-coniferous forest. Topography slopes generally to the south and southwest, with the lowest topographical location being in the southernmost corner of the site. Maintained drainage ditches and 4 man-made ponds are located throughout the former golf course (3 ponds have been filled during Phase 1 of construction). Surrounding land use includes residential and forest coverage to the north and east, and mixed residential and agricultural uses to the south and west. Approximately 65 Oregon white oak trees were inventoried within the PRD Phase 2 boundaries, outside of the Phase 1 development. Most of the Oregon white oak trees within Phase 2 are located within the riparian corridor.

SOILS

The National Resources Conservation Service map depicts six soil units onsite (Table 1): Cove silty clay loam, 0 to 3 percent slopes (CvA), Dollar loam, 0 to 5 percent slopes (DoB), Lauren gravelly loam, 0 to 8 percent slopes (LgB), McBee silt loam, coarse variant, 0 to 3 percent slopes (MIA), and Olympic stony clay loams, 3 to 30 and 30 to 60 percent slopes (OmE and OmF, respectively) (NRCA 2014; Figure 3).

Cove silty clay loam (CvA) is characterized as a very poorly drained soil with a very low capacity for the most limiting layer to transmit water, and an average depth to water table ranging from 0 to 12 inches below ground surface (BGS). This soil is generally formed on flood plains and a typical profile includes silty clay loam from 0 to 4 inches, clay from 4 to 36 inches, and gravelly silty clay loam from 36 to 60 inches BGS. Cove silty clay loam is in Hydrologic Group D¹. Soils in Group D have high run-off potential when thoroughly wet and subsurface water movement ranges from restricted to very restricted. Cove silty clay loam is included on the National Hydric Soils List (NRCS 2015).

Dollar loam (DoB) is characterized as a moderately well drained soil with a very low to moderately low capacity of the most limiting layer to transmit water, and an average depth to water table of 18 to 30 inches BGS. This soil is generally found on terraces and is formed from alluvium. A typical profile includes loam from 0 to 60 inches BGS. Dollar

¹ Hydrologic Group D: soils with high runoff potential when thoroughly wet and water movement through the soil is restricted or very restricted. Group D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. In some areas they also have shrink-swell potential. All soils with a depth to a water-permeable layer that is less than 20 inches and all soils with a water table within 24 inches from the surface are in this group, although some have dual classifications if they can be adequately drained.

loam is in Hydrologic Group C^2 . Soils in Group C have a moderately high runoff potential when thoroughly wet; subsurface transmission is somewhat restricted. Dollar loam is not on the National Hydric Soils List (NRCS 2015).

Lauren gravelly loam (LgB) is characterized as a somewhat excessively drained soil with a moderately high to high capacity of the most limiting layer to transmit water, and an average depth to water table of more than 80 inches BGS. This soil is generally found on terraces and is formed from alluvium with volcanic ash. A typical profile consists of gravelly medial loam from 0 to 6 inches, very gravelly medial loam from 6 to 33 inches, very gravelly coarse sandy loam from 33 to 44 inches, and very gravelly loamy coarse sand from 44 to 60 inches BGS. Lauren gravelly loam is in Hydrologic Group B³. Soils in Group B have a moderately low runoff potential when thoroughly wet, subsurface transmission is unimpeded. Lauren gravelly loam is not on the National Hydric Soils List (NRCS 2015).

McBee silt loam, coarse variant (MIA), is characterized as a somewhat poorly drained soil with a moderately high to high capacity of the most limiting layer to transmit water, and an average depth to water table of about 0 inches BGS. This soil is generally found in depressions and drainageways, and is formed from alluvium. A typical profile consists of silt loam from 0 to 4 inches, loam from 11 to 19 inches, gravelly fine sandy loam from 19 to 44 inches, and very gravelly loamy sand from 44 to 62 inches BGS. McBee silt loam, coarse variant, is in both Hydrologic Group B and C. McBee silt loam is listed as hydric on the National Hydric Soils List (NRCS 2015).

Olympic stony clay loams (OmE and OmF) are characterized as well drained soils with a moderately high capacity for the most limiting layer to transmit water, and an average depth to water table of more than 80 inches BGS. These soils are generally found on mountain slopes, and are formed from residuum and colluvium from igneous rock. Typical profiles include stony clay loam from 0 to 13 inches, clay loam from 13 to 44 inches, and gravelly clay loam from 44 to 60 inches BGS. Olympic stony clay loams are in Hydrologic Group C, and are not included on the National Hydric Soils List (NRCS 2015).

 $^{^{2}}$ Hydrologic Group C: soils with moderately high runoff potential when thoroughly wet and water transmission through the soil is somewhat restricted. Group C soils typically have between 20 percent and 40 percent clay, and less than 50 percent sand. Some soils having clay, silty clay, or sandy clay textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments.

³ Hydrologic Group B: soils with moderately low runoff potential when thoroughly wet and water transmission through the soil is unimpeded. Group B soils typically have between 10 percent and 20 percent clay and 50 percent to 90 percent sand, and have loamy sand or sandy loam textures. Some soils having loam, silt loam, silt, or sandy clay loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments.

Soil Type Distribution Onsite

NRCS maps depict hydric soils CvA and MIA in the southern and central portions of the site where topography forms natural concavities and, consequently, a number of the wetland areas were observed (Figure 3). Non-hydric soils DoB, and OmF are the dominant soil types and are depicted within the northern and central portions of the site. Some wetlands were delineated within non-hydric soils, and likely exist in these areas due to human activities and topography, leading to surface ponding.

Evaluated wetland soils consisted of silty clay loams, clay loams, and silty sand with very dark grayish brown (10YR 3/2), very dark gray (10YR 3/1), and depleted gray (10YR 4/1 and 5/1) hues (Appendix A). Redoximorphic concentrations observed in wetland areas consisted of yellowish browns (10YR 4/6, 5/6, and 5/8), grayish brown (10YR 5/2), yellowish red (5YR 4/6, 5/6 and 5/8), reddish gray (10YR 5/2), and strong browns (7.5YR 4/4, 4/6, and 5/6). The soil profiles meet the criteria for hydric soil indicators A11 (depleted below dark surface), F3 (depleted matrix), and F6 (redox dark surface).

Evaluated upland soils included silty clay loams, gravelly clay loams, and silt loams with brown (10YR 3/3), lighter grayish brown (10YR 5/2, 4/3 and 4/2), and dark yellowish brown (10YR 4/4 and 4/6) hues (Appendix A). Redoximorphic concentrations were observed in select upland test plots; however, they were too faint, deep, or not thick enough in the soil profile to meet hydric soil indicators.

Soil Series	Unit Symbol	Percent Slope	Hydrologic Soil Group	Drainage Class	Hydric Soil
Cove silty clay loam	CvA	0 to 3	D	Very poorly drained	Yes
Dollar loam	DoB	0 to 5	С	Moderately well drained	No
Lauren gravelly loam	LgB	0 to 8	В	Somewhat excessively drained	No
McBee silt loam	MIA	0 to 3	B/D	Somewhat poorly drained	Yes
Olympic stony clay loam	OmE	3 to 30	С	Well drained	No
Olympic stony clay loam	OmF	30 to 60	С	Well drained	No

Table 1. Summary of NRCS Soil Survey Data

ELS biologists' soil observations generally matched NRCS mapped soil series; however, the majority of the wetlands onsite were delineated in areas where non-hydric soils were mapped, and conversely uplands were located in areas where hydric soils were mapped.

NRCS soil series data and mapping practices are based on general, regional soil characteristics and may not accurately display variations in the local soil conditions. The presence or absence of hydric soil does not conclude an area as wetland or upland. Along with hydric soils, hydrology and wetland vegetation must also be present to

determine an area as jurisdictional wetland. Due to localized, micro-variations in topography and hydrology, wetlands may be found in areas where hydric soils have not been mapped by the soil survey.

VEGETATION

Plant species are recorded on the attached wetland delineation data sheets (Appendix A). The indicator categories following the common and scientific names indicate the likelihood of a species to be found in wetlands. Listed from most-likely to least-likely to be found in wetlands, the indicator categories are:

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

The wetlands onsite have diverse strata from emergent, to scrub-shrub, to forested. Dominant wetland vegetation included Oregon white oak (*Quercus garryana*, FACU), Oregon ash (*Fraxinus latifolia*, FACW), Sitka willow (*Salix sitchensis*, FACW), nootka rose (*Rosa nutkana*, FAC), peafruit rose (*Rosa pisocarpa*, FAC), salmonberry (*Rubus spectabilis*, FAC), spiraea (*Spiraea douglasii*, FACW), and pacific ninebark (*Physocarpus capitatus*, FACW) in the tree and shrub layers. Broadleaf cattail (*Typha latifolia*, OBL), water parsley (*Oenanthe sarmentosa*, OBL), reed canarygrass (*Phalaris arundinacea*, FACW), soft rush (*Juncus effusus*, FACW), slough sedge (*Carex obnupta*, OBL), and sawbeak sedge (*Carex stipata*, OBL) were common in the herbaceous stratum.

The uplands are dominated by a former golf course in the central and southern portion of the study area and mixed coniferous-deciduous forest in the northern, non-developed portions of the study area. The former golf course is planted with non-native grasses and has widely spaced deciduous trees, namely bigleaf maple (*Acer macrophyllum*, FACU), Oregon ash, and Oregon white oak. The mixed coniferous-deciduous forest is dominated by upland trees and shrubs including Douglas-fir (*Pseudotsuga menziesii*, FACU), Oregon white oak, western red-cedar (*Thuja plicata*, FAC), and bigleaf maple.

Riparian corridors are dominated by upland trees and shrubs including black cottonwood (*Populus trichocharpa*, FAC), beaked hazelnut (*Corylus cornuta*, FACU), red huckleberry (*Vaccinium parvifolium*, FACU), vine maple (*Acer circinatum*, FAC), snowberry (*Symphoricarpos albus*, FACU), and salal (*Gaultheria shallon*, FACU).

Dominant upland herbaceous plants along the edges of the former golf course and riparian corridors included sword fern (*Polystichum munitum*, FACU), reed canarygrass, bluegrass spp. (*Poa spp.*, FAC), red fescue (*Festuca rubra*, FAC), tall fescue (*Schedonorus arundinaceus* FAC), bull thistle (*Cirsium vulgare*, FACU), fringecup (*Tellima grandiflora*, FACU), trailing blackberry (*Rubus ursinus*, FACU), and Himalayan blackberry (*Rubus armeniacus*, FAC).

HYDROLOGY

Site topography is elevated to the north centrally, near the summit of Green Mountain, directing drainage patterns to the northwest, west, and south. Wetlands B, D, G, J, K, L, and M receive hydrology from seasonally high groundwater tables, precipitation, and surface runoff from surrounding uplands. Hydrology within Wetland B mainly infiltrates, as no surface outlet was observed during the time of the site visit. Wetland D receives additional hydrology from a man-made ditch, located east of the wetland, and has a ditch outlet in which water drains during times of high precipitation. During times of regular rainfall, water infiltrates within Wetland D. Wetland G has a series of existing ditches throughout, conveying hydrology out of the wetland to the west. Hydrology within Wetland J mainly infiltrates, however no surface ponding was observed during the time of the site visit. Hydrology within Wetland L is conveyed to the north to the Type Np stream, Stream A. Wetland M hydrology is conveyed offsite within a manmade ditch. Wetland O receives the majority of its hydrology from water seeping from an onsite man-made pond, and outlets to a mapped Type Ns stream directly to the southwest.

Wetland hydrology indicators included shallow water table (within 12 inches of the soil surface), soil saturation (within 12 inches of the soil surface), surface inundation, geomorphic position, passing the FAC-neutral test, and oxidized rhizospheres among living roots. Indicators of wetland hydrology present during the site visit are recorded on the attached wetland determination data forms (Appendix A).

NATIONAL & LOCAL WETLANDS INVENTORY

National Wetland Inventory (NWI) does not map the presence of any wetlands onsite. One palustrine, emergent, temporary flooded (PEMA) wetland is mapped approximately 1,000 feet to the south of the southern edge of the study area (USFWS 2013; Figure 4). Clark County's local wetland inventory (LWI) maps wetlands in approximately the same location as the ELS-delineated Wetland B (eastern portion) and Wetland D. LWI also maps wetlands which correspond with two of the onsite man-made ponds (Figure 5). ELS findings are somewhat similar to the general landscape position of local inventory wetlands mapped onsite, although we identified additional wetlands within the study area. Wetland maps such as NWI and LWI maps should be used with discretion as they are typically used to gather wetland information about a region and, because of the large scale necessary for regional mapping, are limited in accuracy for localized analyses.

CRITICAL AREAS DISCUSSION

Wetland Categorization

The wetland ratings are according to the *Washington State Wetlands Rating System for Western Washington, Revised* (Rating System) (Hruby 2014; Figure 2; Appendix B). Wetlands B, D, G, and O ratings are according to the *Washington State Wetlands Rating System for Western Washington, Revised* (Hruby 2004; Appendix C). A discussion pertaining to the reasoning behind utilizing the 2004 Rating System for Wetlands B, D, G, and O is contained within the section titled "*Vested Wetlands.*" See Table 2 for a summary of wetlands onsite.

Wetland B

Wetland B is a 4.48-acre onsite, Category III, forested and scrub-shrub, slope wetland, which lies in the central western portion of the study area, and extends outside of the study area to the west. Wetland B scored moderate for habitat functions (21 points), low for hydrologic functions (5 points), and low improving water quality (14 points).

<u>Wetland D</u>

Wetland D is a 0.99-acre Category III, forested, scrub-shrub, and emergent, depressional wetland, which lies in the central portion of the study area. Wetland D scored low for habitat functions (18 points), hydrologic functions (8 points), and improving water quality (14 points).

Wetland G

Wetland G is a 1.94-acre, Category III, scrub-shrub and emergent, slope wetland, which lies in the central portion of the study area. Wetland G contains areas of upland hummocks, with existing ditches located in the northwestern and northeastern portions of the wetland. Wetland G scored low for habitat functions (16 points), hydrologic functions (5 points), and for improving water quality (14 points). A historic retaining/farm pond is located directly south of Wetland G, which was constructed between 1990 and 2002 (Figure D-1; Appendix D). No wetland signature was visible in historical imagery prior to pond construction.

<u>Wetland J</u>

Wetland J is a 0.61-acre, Category III, scrub-shrub and emergent, slope wetland, which lies in the south-central portion of the study area. Water leaves the wetland without being impounded, and no surface ponding was present or evidence of previous ponding. Wetland J scored moderate for habitat functions (6 points), moderate for hydrologic functions (5 points), and moderate for improving water quality (6 points).

Wetland L

Wetland L is a 0.07-acre, Category III, scrub-shrub and emergent, slope wetland, which lies in the easternmost portion of the study area and outlets to Type Np stream (Stream A) via an underground culvert. Wetland L scored moderate for habitat functions (5 points), moderate for hydrologic functions (5 points), and moderate for improving water quality (6 points).

Wetland M

Wetland M is a 0.07-acre, Category III, forested and scrub-shrub, slope wetland, which lies in the central western portion of the study area. Wetland M scored moderate for habitat functions (6 points), moderate for hydrologic functions (5 points), and moderate for improving water quality (5 points).

<u>Wetland O</u>

Wetland O is a 0.02-acre, Category IV, scrub-shrub and emergent, slope wetland, which lies in the south-central portion of the study area. The wetland outlets to a Type Ns stream (Stream B). Wetland O scored low for habitat functions (13 points), hydrologic functions (1 points), and for improving water quality (12 points).

Exempt Wetlands

CMC 16.53.010(*C*)(2)(*b*) states that wetlands created from nonwetland sites, including but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, stormwater facilities, farm ponds, and landscape amenities, are considered artificial wetlands. Wetlands considered artificial according to *CMC* shall be exempt from the provisions of *CMC Chapter* 16.53 *Wetlands*, provided that they are otherwise consistent with the provisions of other local, state, and federal laws and requirements.

Located south of Wetland G is a small, historic farm pond which was created from an upland site sometime between 1990 and 2002 (Figure D-1; Appendix D). As the historic farm pond south of Wetland G was man-made from uplands, it shall be considered exempt from City of Camas regulation and, therefore, no buffers are required.

Wetland Buffer Requirements

CMC 16.53.040 uses the following three parameters in determining wetland buffer widths for wetlands:

- 1) Wetland categorization per the Rating System
- 2) Habitat score from the Rating System
- 3) Proposed land use intensity

Category III wetlands with proposed high land use intensity and habitat scores greater than 5 according to the Rating System, are required to have buffers as designated in *CMC Table 16.53.040-3*. Category III wetlands with habitat scores equal to or less than

four according to the Rating System, are required to have buffers as designated in *CMC Table 16.53.040-1*. Wetland buffers are summarized in Table 2.

Wetland Name (size)	Cowardin Classification ¹ /HGM	State/Local Classification ²	Habitat Score ²	Proposed Land Use Intensity ³	Standard Buffer Width ⁴ (feet)
Wetland B (4.48 acres onsite)	FO, SS, EM/slope	Category III ⁷	21	High	80 ⁵
Wetland D (0.99 acres)	SS & EM/depressional	Category III ⁷	18	High	80 ⁵
Wetland G (1.94 acres)	SS & EM/slope	Category III ⁷	16	High	80 ⁵
Wetland J (0.61 acres)	SS & EM/slope	Category III	6	High	135
Wetland L (0.07 acres)	SS & EM/slope	Category III	5	High	120
Wetland M (0.07 acres)	FO & SS/slope	Category III	6	High	135
Wetland O (0.02 acres)	SS & EM/slope	Category IV ⁷	13	High	50 ⁵

Table 2. Summary of Wetlands Onsite

¹Cowardin *et al.* 1979

²According to Hruby 2014 and Hruby 2004

³According to CMC Table 16.53.040-4

⁴According to CMC Table 16.53.040-1 and Table 16.53.040-3

⁵See section "Vested Wetlands" for buffer designations

Vested Wetlands

The buffers for wetlands B, D, G and O were previously established by the City of Camas according to a *Critical Areas Report* produced in December 2014, under past approvals for the Green Mountain PRD. Under City File No. SUB14-02, the city granted PRD approval for a 1,300 lot multi-phased, multi-use development, and subdivision approval for 201 lots. Those approvals impacted critical areas relating to Wetlands B, D, G and O; thus triggering the City's regulations. Because of this, the Applicant was required to perform critical area analyses compliant with the City's protocols. This analysis resulted in the City establishing the classification and buffer standards for these wetlands under the municipal code active at the time. Table 3 depicts the wetland type and buffers for Wetlands B, D, G, and O previously established by the City.

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Wetland Name (size)	Cowardin Classification ¹ /HGM	State/Local Classification ²	Habitat Score ²	Proposed Land Use Intensity ³	Standard Buffer Width ⁴ (feet)
Wetland B (4.48 acres onsite)	FO & SS/slope	Category III	21	High	80
Wetland D (0.99 acres)	SS & EM/depressional	Category III	18	High	80
Wetland G (1.94 acres)	SS & EM/slope	Category III	16	High	80
Wetland O (0.02 acres)	FO/slope	Category IV	13	High	50

Table 3. Wetlands Vested from December 2014 Critical Areas Report

¹Cowardin *et al.* 1979

²According to Hruby 2004

³According to *CMC Table 16.53.040-4*

⁴According to *CMC Table 16.53.040-1*

Functionally Isolated Buffers

According to *CMC 16.53.040(B)(4)(b)(i)*, functionally isolated buffers are areas in which the buffer is functionally isolated from the wetland and does not protect the wetland from adverse impacts. These areas include preexisting roads, structures, or vertical separation. Wetland buffers have been designated as functionally isolated where paved and gravel roads, gravel trails, and buildings are located within PRD Phase 2 (Figure 2). These functionally isolating features intersecting the wetland buffers disrupt the natural infiltration system the buffer provides for the wetland, removing the potential for the buffer to provide adequate protection of the wetland from surrounding uses.

Fish and Wildlife Habitat Conservation Areas

CMC Chapter 16.61 regulates Fish and Wildlife Habitat Conservation Areas, which include areas with which state or federally designated endangered, threatened, and sensitive species have a primary association, state priority habitats and areas associated with state priority species, habitats of local importance (Oregon white oak and Camas lily), naturally occurring ponds under 20 acres, waters of the state, bodies of water planted with game fish by a governmental or tribal entity, and state natural area preserves and natural resource conservation areas (*CMC 16.61.010(A)*).

Streams

Washington Department of Natural Resources (DNR) Forest Practice Maps indicate the presence of one undefined stream, originating offsite to the east within the central portion of the study area (Figure 7). This stream is mapped as flowing through the former golf course, into the forested area, and offsite under NE Ingles Road. ELS biologists did not locate a natural defined channel or the presence of surface water in the areas mapped by the DNR as having a stream. Instead, several wetlands are present in roughly the trajectory of the mapped stream (Figure 2). ELS biologists did identify two streams onsite:

<u>Stream A</u>

Stream A originates offsite to the east, flows southwesterly through the southern portion of the study area, and drains offsite to the south into a roadside ditch along NW Goodwin Road (Figure 2; Table 4). This stream has flow year round, and therefore, is considered perennial, is not known to be used by fish, and does not meet the physical criteria to be used by fish. Stream A is approximately 3- to 5-feet feet in diameter at bank-full-width, and consists mainly of riffles with no apparent pools. Stream substrate consists of mainly small cobble and sand/sediment. Stream A is not mapped on the DNR Forest Practice Map (Figure 7).

<u>Stream B</u>

Stream B is a Type Ns (non-fish, seasonal) stream (Figure 2; Table 4). This stream originates onsite, near the location of one of the former golf course ponds and Wetland O, and flows southwesterly and offsite into a roadside ditch along NE Ingle Road. This stream had an approximate bank-full-width of 1- to 2-feet during the time of the site visit, and stream substrate consisted of mainly small cobble and sand. Stream B is not mapped on the DNR Forest Practice Map (Figure 7).

Stream Name	DNR Stream Type	Stream Buffer Width ¹ (feet)
Stream A	Type Np (non-fish, perennial)	50
Stream B	Type Ns (non-fish, seasonal)	25

Table 4. Summary of Streams Onsite

¹According to *CMC 16.61.040(D)*, stream buffer widths shall be measured outward, on the horizontal plane, from the ordinary high water mark. This determination is preliminary until reviewed, modified and/or approved by the City of Camas.

Oregon White Oak

The study area has previously been assessed for Oregon white oak, which is included in the Oregon White Oak Advance Mitigation Plan for Green Mountain Mixed Use PRD prepared by Ecological Land Services, Inc. on February 24, 2016 (City File No. SUB14-02).

Ponds

Per *CMC* 16.53.010(C)(2)(b), artificial wetlands are exempt from the provisions of *Chapter* 16.53. Artificial wetlands are considered by the City of Camas to be wetlands created from non-wetland sites including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, stormwater facilities, farm ponds, and landscape amenities. The 4 remaining onsite ponds were created as part of the former golf course and have plastic-lined bottoms, and therefore, require no buffers or further regulation from *CMC*.

LIMITATIONS

ELS personnel base the conclusions contained within this report on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with the findings presented in this report.

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

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

REFERENCES

- City of Camas Municipal Code. 2008. *Critical Areas Ordinance Chapter 16.53 Wetlands.* March 2016.
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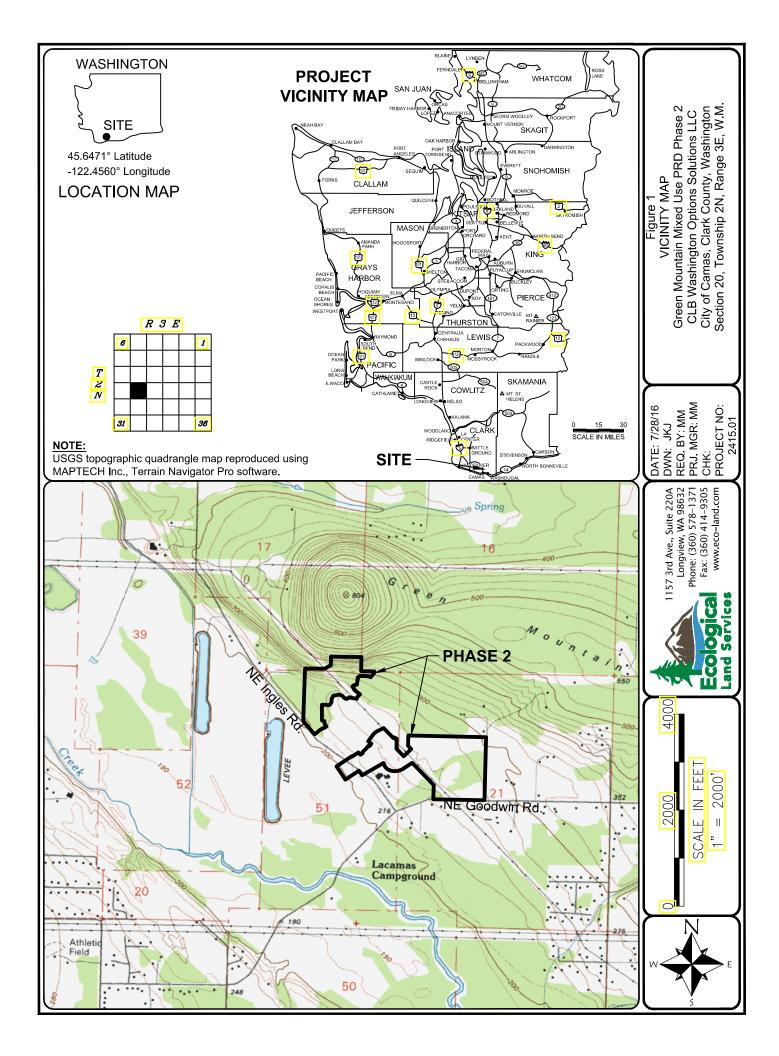
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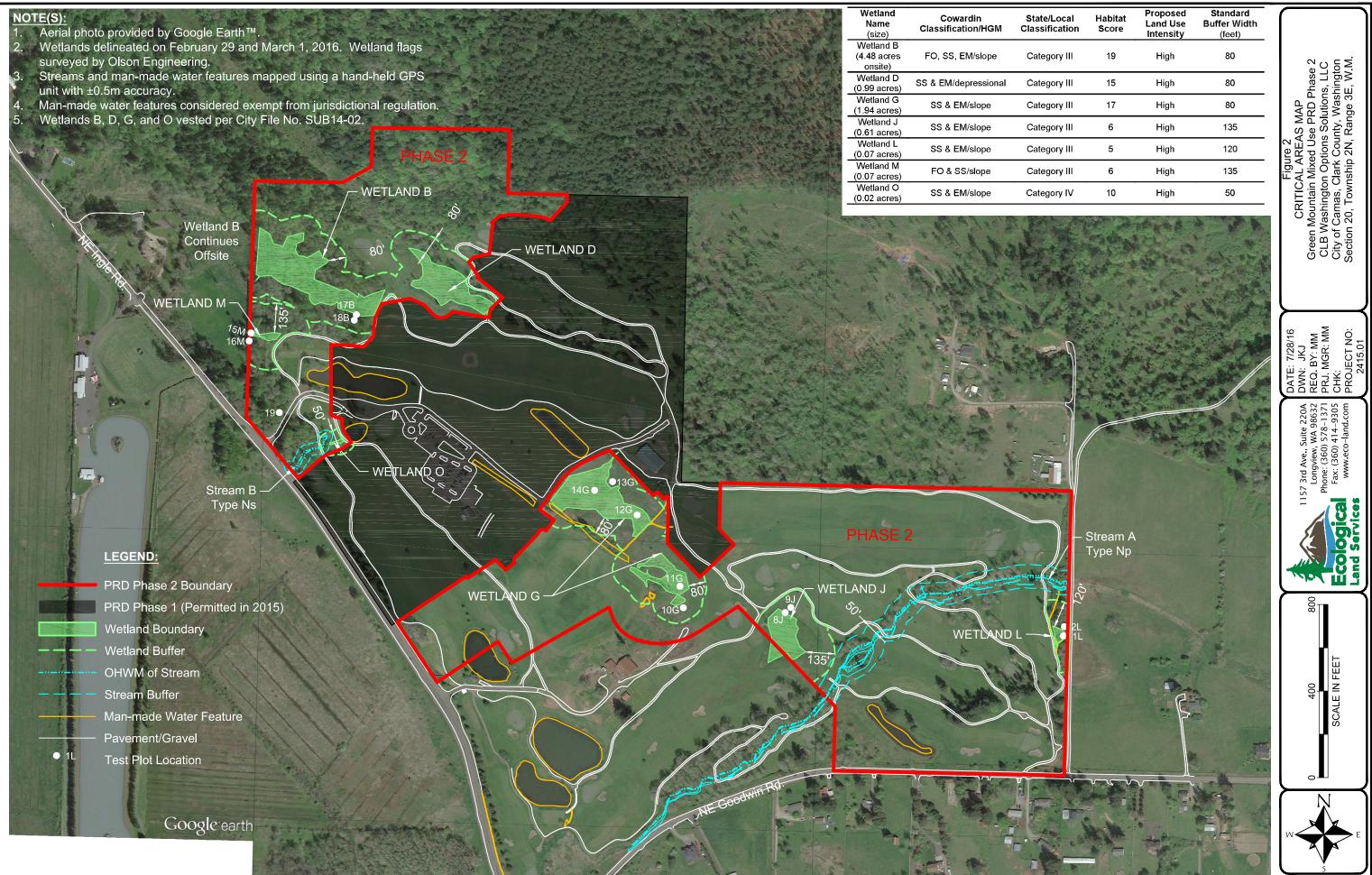
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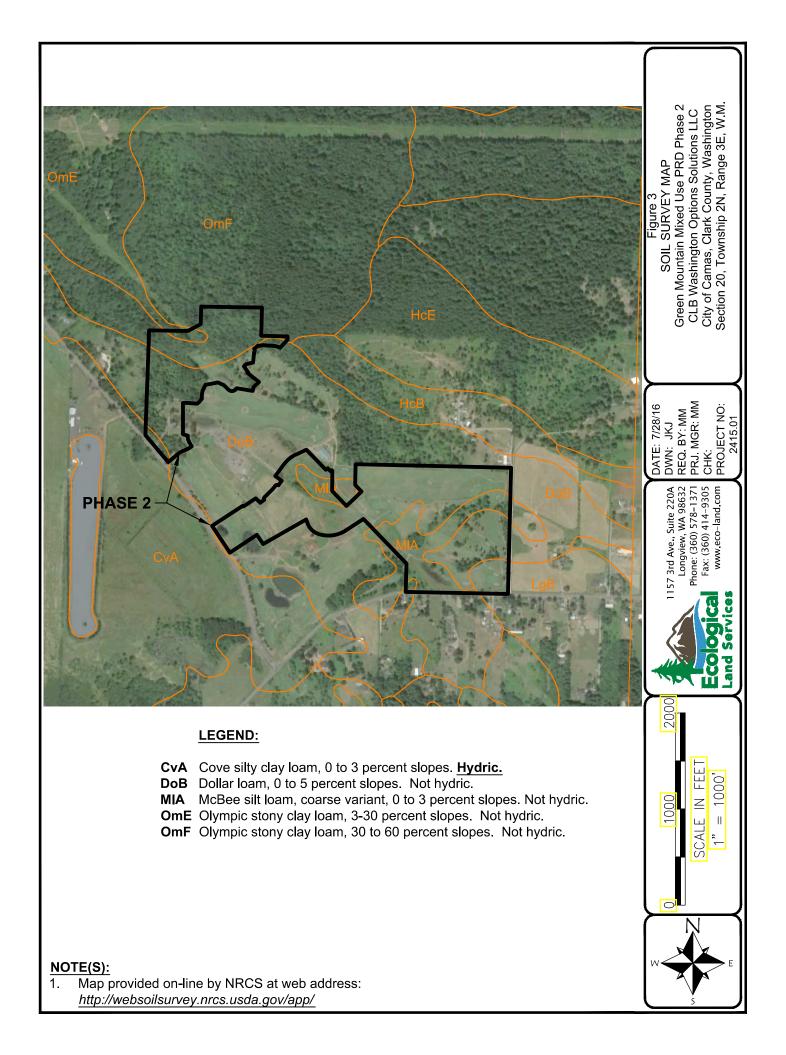
Figures

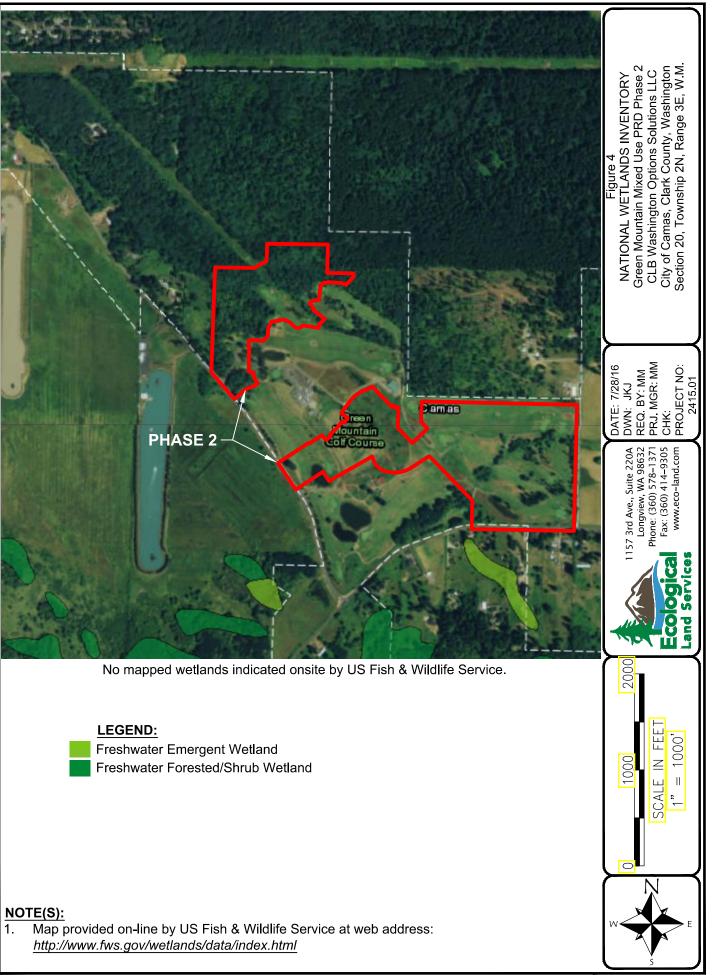
Vicinity Map Figure 1 Critical Areas Map Figure 2 Figure 2 Critical Areas Map (oversized) Figure 3 Soil Survey Map National Wetlands Inventory Figure 4 Clark County Critical Areas Map Figure 5 Figure 6 WDFW Priority Habitat and Species Figure 7 DNR Stream Type Map Photoplates 1-5

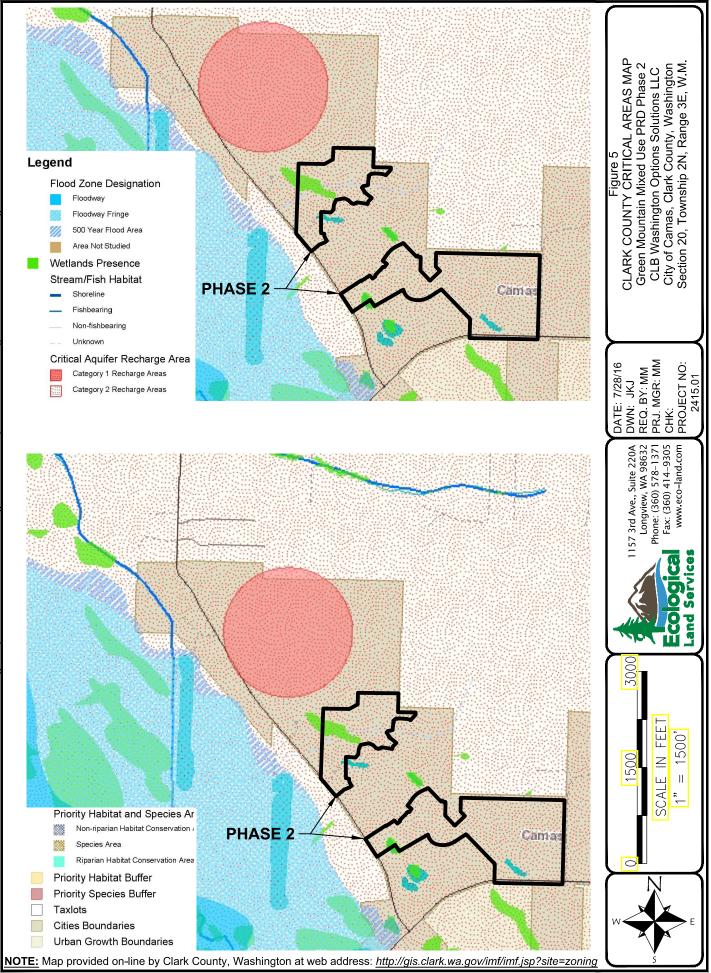


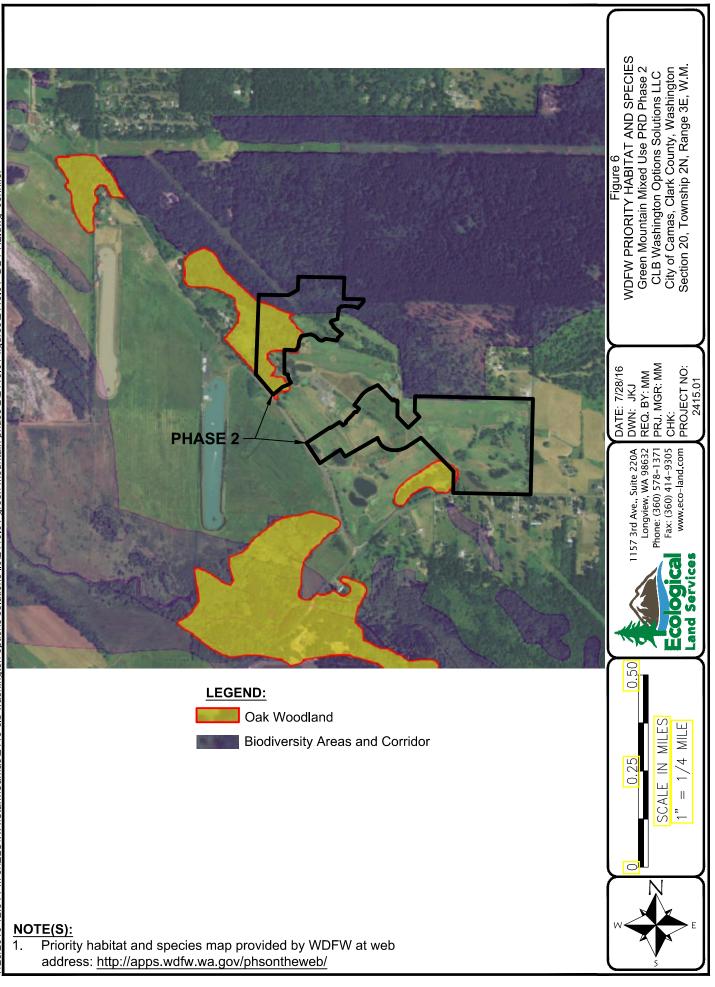


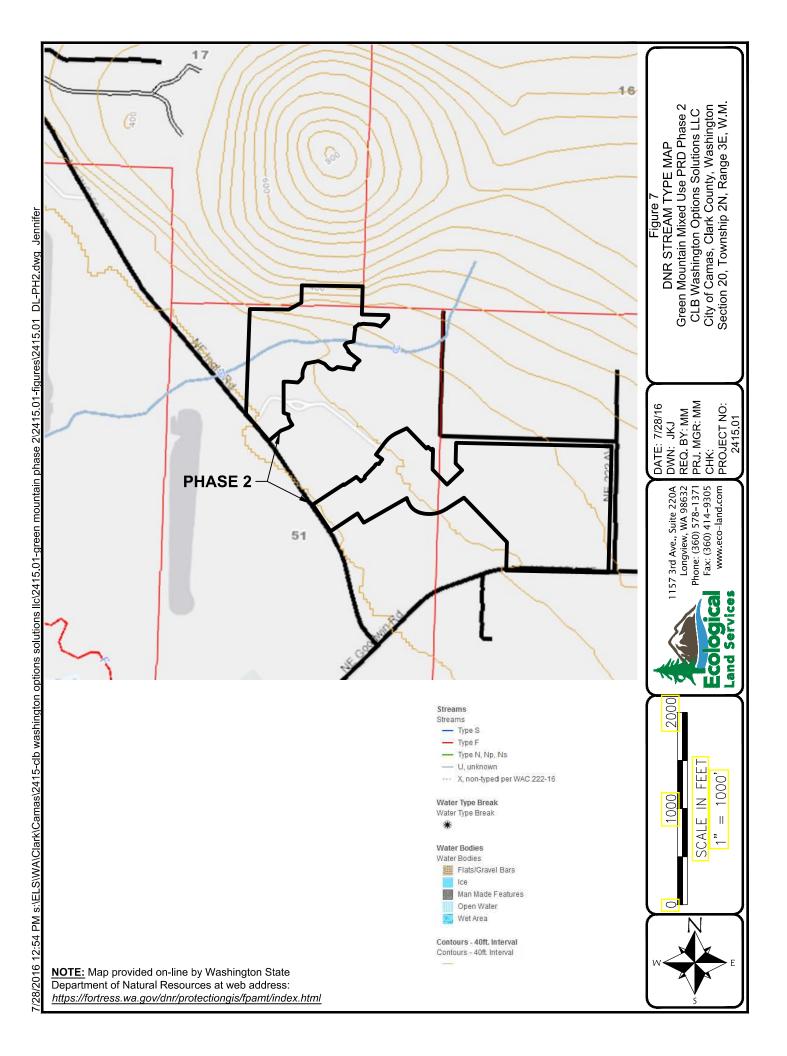
State/Local Classification	Habitat Score	Proposed Land Use Intensity	Standard Buffer Width (feet)
Category III	19	High	80
Category III	15	High	80
Category III	17	High	80
Category III	6	High	135
Category III	5	High	120
Category III	6	High	135
Category IV	10	High	50





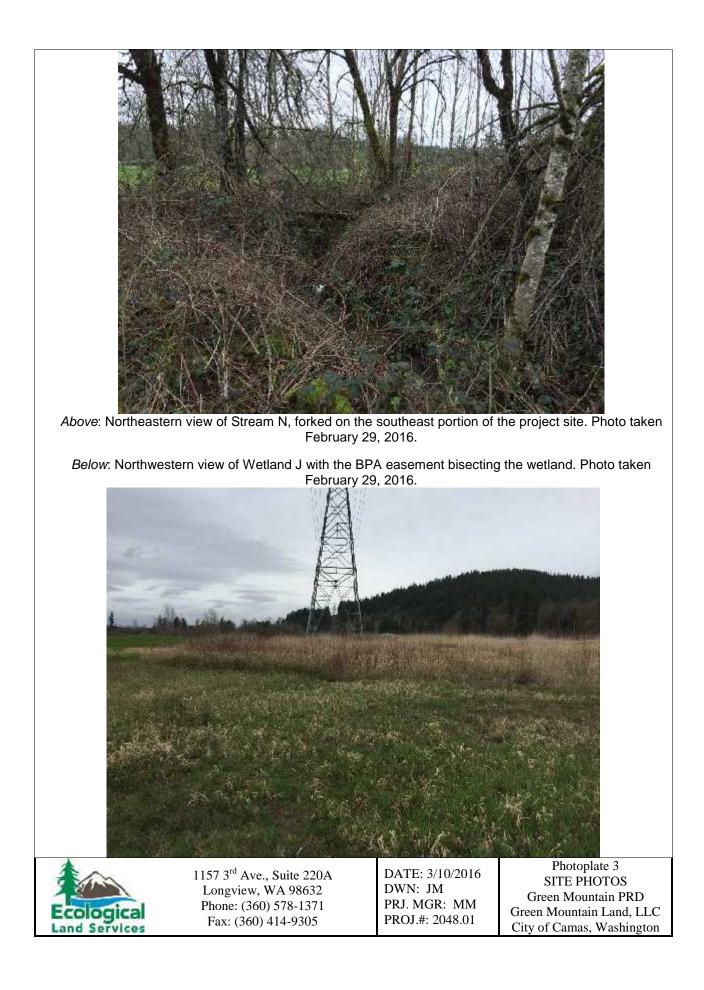


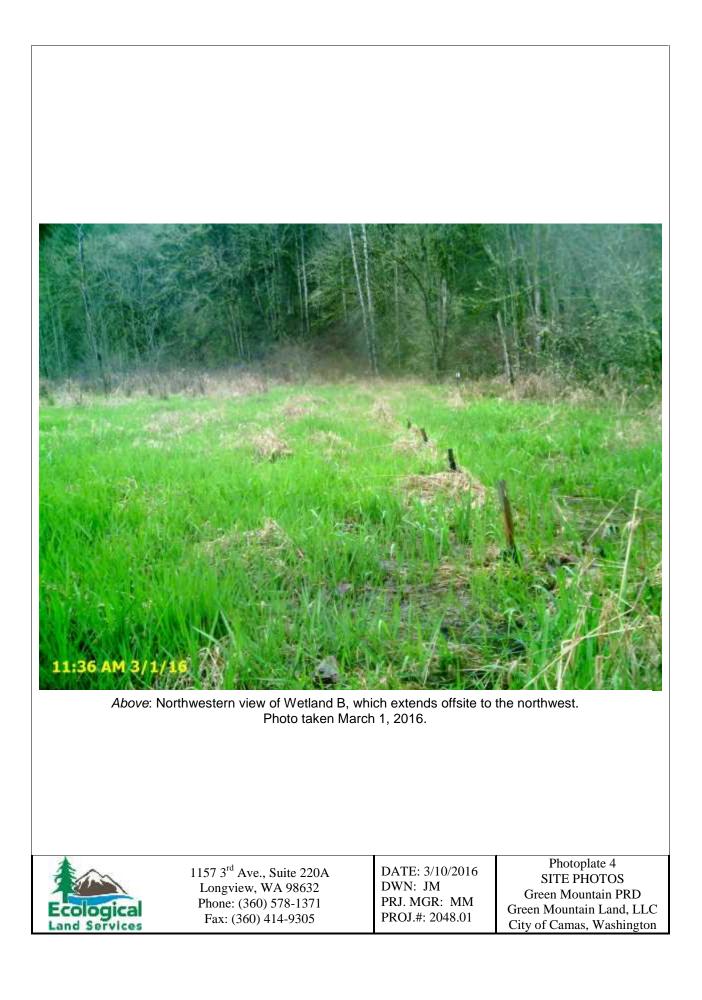


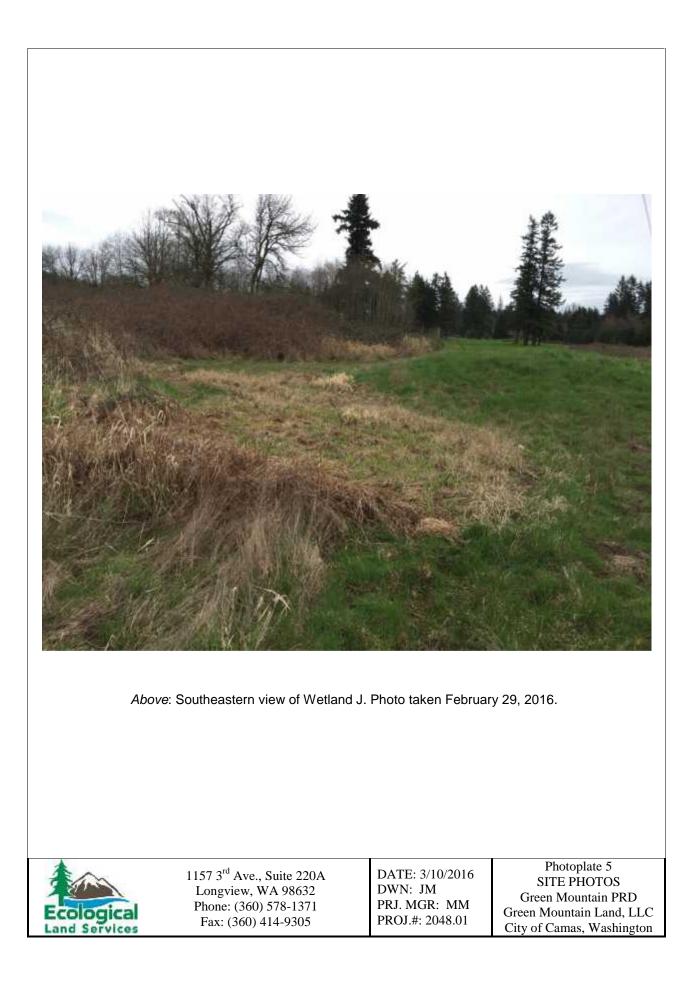












Appendix A

Wetland Determination Data Forms

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

Project/Site: Green Mountain PRD Applicant/Owner: Green Mountain Land, LLC		City/Co	unty: <u>Camas/</u> State: W		npling Date: <u>2/29/2</u> Sampling Point:	
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho	ffmann	Sectio	n, Township	, Range: 20, 2N, 3E		
Landform (hillslope, terrace, etc.): footslope		Local relief: Co			S	lope (%):0-3%
Subregion (LRR): A2	Lat: 45.647	' 1	Long:-122.	4560	Datum: NAD8	33
Soil Map Unit Name: MIA, McBee silt loam				WI classification: none		
Are climatic / hydrologic conditions on the site typical for	or this time of	year? Yes⊠	No (If ı	no, explain Remarks.)		
Are Vegetation, Soil, or Hydrology significantly	v disturbed?	Are	ea "Normal (Circumstances" preser	nt? Yes⊠ No⊡	
Are Vegetation, Soil, or Hydrology naturally pr				any answers in Remarl		
SUMMARY OF FINDINGS – Attach site map		ampling po	int locatio	ons, transects, imr	ortant features	s. etc.
	-					5, 5101
		Is the Sar	mpled Area			
Hydric Soils Present? Yes No [within a W		Yes⊠ I	No	
Wetland Hydrology Present? Yes No Remarks: Test plot located within Wetland L. All three			at therefore	the test plat was some		a d
Remarks. Test plot located within wettand L. All three	welland para		el, lliereiore	the test plot was samp	neu within a wellar	iu.
VEGETATION (Use scientific names)						
	Absolute	Dominant	Indicator	Dominance Test W	/orksheet	
Tree Stratum (Plot size:30 ft radius)	% Cover	Species?	Status			
1.	%			Number of Dominan	t Species	5 (A)
2.	%			That Are OBL, FAC	N, or FAC:	
3.	%					
4.	%			Total Number of Do		5 (B)
Total Cover:	%			Species Across All S	Strata:	(=)
	/0					100 (A/B)
				Percent of Dominan		(////
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u> radius)				That Are OBL, FAC		
1. Rosa nutkana	20%	yes	FAC	Prevalence Index v		
2. Physocarpus capitatus	20%	yes	FACW	Total % Cove	er of: M	ultiply by:
3. Spiraea douglasii	10%	yes	FACW	OBL species	x 1=	
4	%			FACW species	x 2=	
5.	%			FAC species	x 3=	
Total Cover:	50%			FACU species	x 4=	
Herb Stratum (Plot size: 5 ft radius)				UPL species	x 5=	
1. Phalaris arundinacea	80%	yes	FACW	Column Totals:	(A)	(B)
2. Carex stipata	20%	yes	OBL	Prevale	ence Index = B/A=	
3.	%			Hydrophytic Veget	ation Indicators:	
4.	0/			1 – Rapid Tes	t for Hydrophytic V	egetation
	%			2 – Dominanc		0
5.	%			3 - Prevalence		
6.	0/			4 - Morpholog	ical Adaptations ¹ (Provide
	%					n a separate sheet)
7.	%					
8.	%			Wetland Non-'	Vascular Plants ¹	
Total Cover:	100%			Problematic H	ydrophytic Vegeta	tion ¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft radius)					, , , , ,	
1	%			¹ Indicators of hydric	soil and wetland h	vdrology
2.	%			Must be present, un		
Total Cover:	%				•	
	<u> </u>			Hydrophytic Vegeta	tion Procent?	
0/ Dana Oracuratia Ulark Otratura 00/				i iyulopiiyiic vegeta	lion Fresent:	
% Bare Ground in Herb Stratum 0%						Yes⊠ No⊡
Remarks:Trace amount of Rubus ursinus (FACU). Th	e dominance	test was met o	aue to over 5	0% of dominant speci	ES DEING OBL, FAU	LW, OF FAC.

SOIL

Depth	Matrix			Redox Featu	ires			
(inches) Color (m	2.1.1	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8 10YR 4		100%		%			silty clay loam	
8-16 10YR 4	4/1	60%	7.5YR 5/8	40%	С	М	silty clay loam	
		%		%				
		<u>%</u>		%				
		<u>%</u>		%				
<u> </u>		<u> % </u>		%				
·		<u></u>		%				
¹ Type: C=Concentr	ation, D	=Depletion, F	RM=Reduced Matri		or Coated S	and Grains	s. ² Location: PL=Pore Linin	g, M=Matrix
Hydric Soil Indicato							Indicators for Problemation	
Histosal (A1)			🗌 Sandy Redo		-		🗌 2 cm Muck (A10)	-
Histic Epipedon (A	42)		Stripped Ma	trix (S6)			Red Parent Material (TF2	
							Very Shallow Dark Surface	
Black Histic (A3)	()		-	ky Mineral (F1) (except MLR	(A 1)	Other (Explain in Remark	(S)
Hydrogen Sulfide	. ,		Loamy Gley					
Depleted Below D		ace (ATT)	Depleted Ma	. ,				
Sandy Mucky Min	· · ·	4)	Redox Dark					
Sandy Mucky Min	•	,		()			Indicators of hydrophytic ve	•
Restrictive Layer (if							Wetland hydrology must	be present
Restrictive Layer (II	presen	() :						
Туре:						Hyd	ric Soil Present?	
<u> </u>								Yes⊠ No⊡
Depth (inches):								
							e chroma of 2 or less and is	
beginning within 10 ir	nches of	the soil surfa	ace. Redox concen	trations are pres	sent, which i	s required i	in soils with matrix colors of	4/2.
HYDROLOGY								
	Indicat						Cocondon Indicator	
Wetland Hydrology	Indicate	ors:					Secondary Indicator	
			heck all that apply)			Secondary Indicator (2 or more required)	
Wetland Hydrology			heck all that apply)			(2 or more required)	
Wetland Hydrology	nin. of or		heck all that apply	,	(except MLI	RA 1, 2, 4A	(2 or more required)	eaves (B9)
Wetland Hydrology Primary Indicators (m Surface Water (A High Water Table	nin. of or 1)			ed Leaves (B9)	(except MLI	RA 1, 2, 4A	(2 or more required) Water Stained Le (MLRA 1, 2, 4A, Drainage Pattern	eaves (B9) and 4B) ıs (B10)
Wetland Hydrology Primary Indicators (m □ Surface Water (A ☑ High Water Table ☑ Saturation (A3)	nin. of or 1) (A2)		☐ Water-Stain ☐ Salt Crust (E ☐ Aquatic Inve	ed Leaves (B9) 311) rtebrates (B13)		RA 1, 2, 4A	(2 or more required)	eaves (B9) and 4B) ıs (B10)
Wetland Hydrology Primary Indicators (m □ Surface Water (A ⊠ High Water Table ⊠ Saturation (A3) □ Water Marks (B1)	nin. of or 1) (A2)		☐ Water-Stain ☐ Salt Crust (E ☐ Aquatic Inve ☐ Hydrogen St	ed Leaves (B9) 811) rtebrates (B13) ulfide Odor (C1)			(2 or more required) Water Stained Le (MLRA 1, 2, 4A, Drainage Pattern Dry-Season Wate Saturation Visible	eaves (B9) and 4B) Is (B10) er Table (C2) e on Aerial Imagery (C9)
Wetland Hydrology Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit	nin. of or 1) (A2) rs (B2)		☐ Water-Stain ☐ Salt Crust (E ☐ Aquatic Inve ☐ Hydrogen Si ☐ Oxidized Rh	ed Leaves (B9) 311) rtebrates (B13) ulfide Odor (C1) izospheres alon	ng Living Roc		(2 or more required) Water Stained Le (MLRA 1, 2, 4A, Drainage Pattern Dry-Season Wate Saturation Visible Geomorphic Pos	eaves (B9) and 4B) is (B10) er Table (C2) e on Aerial Imagery (C9) ition (D2)
Wetland Hydrology Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3)	nin. of or 1) (A2) s (B2))		☐ Water-Staind ☐ Salt Crust (E ☐ Aquatic Inve ☐ Hydrogen Si ☐ Oxidized Rh ☐ Presence of	ed Leaves (B9) 311) rtebrates (B13) ulfide Odor (C1) izospheres alon Reduced Iron (ng Living Roc C4)	ots (C3)	(2 or more required) Water Stained Le (MLRA 1, 2, 4A, Drainage Pattern Dry-Season Water Saturation Visible Geomorphic Pos Shallow Aquitard	eaves (B9) and 4B) is (B10) er Table (C2) e on Aerial Imagery (C9) ition (D2) I (D3)
Wetland Hydrology Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3 Algal Mat or crust	nin. of or 1) (A2) s (B2)) (B4)		□ Water-Staind □ Salt Crust (E □ Aquatic Inve □ Hydrogen Si □ Oxidized Rh □ Presence of □ Recent Iron	ed Leaves (B9) 311) rtebrates (B13) ulfide Odor (C1) izospheres alon Reduced Iron (Reduction in Til	ng Living Roc C4) Ied Soils (C6	ots (C3)	(2 or more required) Water Stained Le (MLRA 1, 2, 4A, Drainage Pattern Dry-Season Water Saturation Visible Geomorphic Pos Shallow Aquitard FAC-Neutral Tes	eaves (B9) and 4B) is (B10) er Table (C2) e on Aerial Imagery (C9) ition (D2) I (D3) t (D5)
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Wetland Hydrology Primary Indicators (m Surface Water (A) High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or crust Iron Deposits (B5) Surface Soil Crac Inundation Visible Field Observations: Surface Water Prese Water Table Present Saturation Present? (Includes Capillary fri	nin. of or 1) (A2) s (B2)) (B4)) ks (B6) on Aeria nt? ? nge)	al Imagery (E Yes □ Yes ⊠ Yes ⊠	□ Water-Staind □ Salt Crust (E □ Aquatic Invertion □ Hydrogen State □ Oxidized Rh □ Presence of □ Recent Iron □ Stunted or S □ Other (Explain 37) No No □ No □ No □ No □	ed Leaves (B9) 311) rtebrates (B13) ulfide Odor (C1) izospheres alon Reduced Iron (Reduction in Til tressed Plants (in in Remarks) Depth (Inches): Depth (Inches):	ng Living Roc C4) led Soils (C6 (D1) (LRR A <u>7</u> <u>7</u>	ots (C3) ;)) Wetla	(2 or more required)	eaves (B9) and 4B) is (B10) er Table (C2) e on Aerial Imagery (C9) ition (D2) I (D3) t (D5) nds (D6) (LRR A) nmocks (D4)
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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Green Mountain PRD		City/Co	ounty: Camas		oling Date: 2/29/20		
Applicant/Owner: Green Mountain Land, LLC	ffmonr	Contin	State: W	/A b, Range: 20, 2N, 3E	Sampling Point: 2	Point: 2L	
Investigator(s): <u>M. MGrath, F. Naglich, J. Madriz, L. Ho</u> Landform (hillslope, terrace, etc.): footslope		Local relief: Co		, Range. <u>20, 2N, 3E</u>	01	ope (%):0-3%	
Subregion (LRR):A2	Lat: 45.647		Long:-122	1560	Datum: NAD8		
Soll Map Unit Name: MIA, McBee silt loam	Lat. 45.047	1		IWI classification: none		3	
Are climatic / hydrologic conditions on the site typical f	or this time of	vear? Ves					
Are Vegetation, Soil, or Hydrology significant				Circumstances" present			
Are Vegetation, Soil, or Hydrology naturally p				any answers in Remarks			
SUMMARY OF FINDINGS – Attach site map				-		etc	
-		amping po		nis, transects, impo		, elc.	
Hydrophytic Vegetation Present? Yes No		Is the Sa	mpled Area				
Hydric Soils Present? Yes No [Wetland?		אמ		
Wetland Hydrology Present? Yes No Remarks: Test plot located northeast of Wetland L. N		iootoro woro p	recent there	fore the test plat was as		inland area	
			,				
VEGETATION (Use scientific names)							
Tree Stratum (Plot size:30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Wo			
1	%			Number of Dominant		0 (A)	
2	%			That Are OBL, FACW	, or FAC:		
3	%			Total Number of Dom	inant		
4	%			Species Across All St		4 (B)	
Total Cover:	%				iata.		
				Percent of Dominant	Species –	0 (A/B)	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 f</u> t. radius)				That Are OBL, FACW			
1. Corylus cornuta	70%	yes	FACU	Prevalence Index wo			
2. Rubus ursinus	30%	yes	FACU	Total % Cover	of: Mu	ultiply by:	
3. Vaccinium parvifolium	20%	no	FACU	OBL species	x 1=		
4. Rosa nutkana	10%	no	FAC	FACW species	x 2=		
5	%			FAC species	x 3=		
Total Cover:	110%			FACU species	x 4=		
Herb Stratum (Plot size: <u>5</u> ft radius)	000/			UPL species	x 5=	(D)	
1. <u>Polystichum munitum</u>	30%	yes	FACU	Column Totals:	(A)	(B)	
2. Tellima grandiflora	15%	yes	FACU		ice Index = B/A=_	<u> </u>	
3. Juncus effusus	5%	no	FACW	Hydrophytic Vegeta		anatatian	
4.	%			1 – Rapid Test		egetation	
5.	%			3 - Prevalence			
6					al Adaptations ¹ (F	Provide	
·.	%				In Remarks or or		
7.	%						
8.	%			Wetland Non-V			
Total Cover:	50%			Problematic Hy	drophytic Vegetat	ion ¹ (Explain)	
Woody Vine Stratum (Plot size: <u>15</u> ft radius)	_						
1	%			¹ Indicators of hydric s			
2	%			Must be present, unle	ess disturbed or pr	oblematic.	
Total Cover:	%						
				Hydrophytic Vegetati	on Present?		
% Bare Ground in Herb Stratum 50%						Yes⊟ No⊠	
Remarks:50% of bare ground in the herbaceous strat	um was cove	red in leaf mat	ter. Hydroph	vtic vegetation is not pre	esent because the	number of OBL,	
FACW, and FAC plant observed within the vicinity of the							
, , , , , , , , , , , , , , , , , , ,				3 F. 500.			

SOIL

Profile De	scription: (Desc						Serice of mulcalors.)	
Depth	Matrix		2 1 (1 1)	Redox Featu		2	-	
(inches)	Color (moist) 10YR 3/4	<u>%</u>	Color (moist) 5YR 4/6	%	Type ¹ L	.0C ²	Texture	Remarks
0-16	101K 3/4	<u> </u>	51K 4/0	20%%			sandy clay loam	
		<u> </u>		%				
		%		%				
		%		%				
		<u>%</u>		<u>%</u>				
		%		<u> </u>				
¹ Type: C	=Concentration.		M=Reduced Matri		or Coated Sand	Grains.	² Location: PL=Pore Lining,	M=Matrix
			I LRRs, unless ot				ndicators for Problematic I	
Histosa		•	Sandy Redo	x (S5)			2 cm Muck (A10)	•
Histic E	pipedon (A2)		Stripped Ma	trix (S6)			Red Parent Material (TF2)	(mmm)
							Very Shallow Dark Surface	
Black H					except MLRA 1)		Other (Explain in Remarks))
	en Sulfide (A4)							
	ed Below Dark Su							
)ark Surface (A12	,	Redox Dark	· · ·		3.		
-	Mucky Minerals (Depleted Da	. ,		°In	dicators of hydrophytic vege	
-	Gleyed Matrix (S4 e Layer (if prese			essions (F8)			Wetland hydrology must be	e present
Restrictive	e Layer (if prese	nt):						
Type:						Hydrid	c Soil Present?	
	_					•		Yes⊡ No⊠
Depth (incl								
Remarks: I	No hydric soil ind	icators were m	et because the ch	roma of the soil s	sample was too	high.		
HYDROL	_OGY							
	-OGY Iydrology Indica	itors:					Secondary Indicators	
Wetland H	lydrology Indica						Secondary Indicators (2 or more required)	
Wetland H	lydrology Indica		heck all that apply)			(2 or more required)	
Wetland H Primary Ind	lydrology Indica				((2 or more required)	
Wetland H Primary Ind	Hydrology Indica dicators (min. of o Water (A1)		U Water-Stain	ed Leaves (B9) (/except MLRA 1	, 2, 4A, 8	(2 or more required)	nd 4B)
Wetland H Primary Ind	Hydrology Indica dicators (min. of o Water (A1) ater Table (A2)		☐ Water-Stain	ed Leaves (B9) (311)	except MLRA 1	, 2, 4A, 8	(2 or more required)	nd 4B) (B10)
Wetland H Primary Ind Surface	Hydrology Indica dicators (min. of o Water (A1) dater Table (A2) ion (A3)		☐ Water-Stain ☐ Salt Crust (E ☐ Aquatic Inve	ed Leaves (B9) (311) irtebrates (B13)	(except MLRA 1	, 2, 4A, 8	(2 or more required) Water Stained Leav (MLRA 1, 2, 4A, ar Drainage Patterns Dry-Season Water	n d 4B) (B10) Table (C2)
Wetland H Primary Ind Surface High W Saturat Water M	Hydrology Indica dicators (min. of o e Water (A1) dater Table (A2) ion (A3) Marks (B1)		U Water-Stain Salt Crust (E Aquatic Inve	ed Leaves (B9) (311) irtebrates (B13) ulfide Odor (C1)			(2 or more required) Water Stained Leav (MLRA 1, 2, 4A, ar Drainage Patterns Dry-Season Water Saturation Visible of	nd 4B) (B10) Table (C2) on Aerial Imagery (C9)
Wetland H Primary Ind Surface High W Saturat Water N Sedime	Hydrology Indica dicators (min. of o e Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		☐ Water-Stain ☐ Salt Crust (E ☐ Aquatic Inve ☐ Hydrogen Si ☐ Oxidized Rh	ed Leaves (B9) (311) irtebrates (B13) ulfide Odor (C1) izospheres alon	g Living Roots (0		(2 or more required) Water Stained Leave 4B (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2)
Wetland H Primary Ind Surface High W Saturat Water M Sedime Drift De	Aydrology Indication dicators (min. of of e Water (A1) Vater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		☐ Water-Staind ☐ Salt Crust (E ☐ Aquatic Inve ☐ Hydrogen Si ☐ Oxidized Rh ☐ Presence of	ed Leaves (B9) (311) irtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C	g Living Roots (0 C4)		(2 or more required) Water Stained Leav (MLRA 1, 2, 4A, ar Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Positio Shallow Aquitard ([nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3)
Wetland H Primary Ind Surface High W Saturat Water M Sedime Drift De Algal M	Aydrology Indication dicators (min. of of water (A1) vater Table (A2) ion (A3) Marks (B1) warks (B1) eposits (B2) eposits (B3) lat or crust (B4)		☐ Water-Stain ☐ Salt Crust (E ☐ Aquatic Inve ☐ Hydrogen Si ☐ Oxidized Rh ☐ Presence of ☐ Recent Iron	ed Leaves (B9) (311) Intebrates (B13) Ilfide Odor (C1) izospheres alon Reduced Iron (C Reduction in Till	g Living Roots ((C4) ed Soils (C6)		(2 or more required) Water Stained Leave & 4B) (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (II FAC-Neutral Test (nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M I Iron De	Aydrology Indicators (min. of of e Water (A1) vater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5)	one required; c	 □ Water-Staina □ Salt Crust (E □ Aquatic Inve □ Hydrogen Si □ Oxidized Rh □ Presence of □ Recent Iron □ Stunted or Si 	ed Leaves (B9) (311) Intebrates (B13) Ilfide Odor (C1) izospheres alon Reduced Iron (C Reduced Iron (C Reduction in Till Itressed Plants (g Living Roots ((C4) ed Soils (C6)		(2 or more required) Water Stained Leav (MLRA 1, 2, 4A, ar Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Positio Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface	Addicators (min. of o e Water (A1) fater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) e Soil Cracks (B6)	one required; c	 □ Water-Staina □ Salt Crust (E □ Aquatic Inve □ Hydrogen Sa □ Oxidized Rh □ Presence of □ Recent Iron □ Stunted or Sa □ Other (Explage) 	ed Leaves (B9) (311) Intebrates (B13) Ilfide Odor (C1) izospheres alon Reduced Iron (C Reduced Iron (C Reduction in Till Itressed Plants (g Living Roots ((C4) ed Soils (C6)		(2 or more required) Water Stained Leave & 4B) (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (II FAC-Neutral Test (nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface	Aydrology Indicators (min. of of e Water (A1) vater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5)	one required; c	 □ Water-Staina □ Salt Crust (E □ Aquatic Inve □ Hydrogen Sa □ Oxidized Rh □ Presence of □ Recent Iron □ Stunted or Sa □ Other (Explage) 	ed Leaves (B9) (311) Intebrates (B13) Ilfide Odor (C1) izospheres alon Reduced Iron (C Reduced Iron (C Reduction in Till Itressed Plants (g Living Roots ((C4) ed Soils (C6)		(2 or more required) Water Stained Leav (MLRA 1, 2, 4A, ar Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Positio Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface	Aydrology Indicators (min. of of Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) Soil Cracks (B6) tion Visible on Ae	one required; c	 □ Water-Staina □ Salt Crust (E □ Aquatic Inve □ Hydrogen Sa □ Oxidized Rh □ Presence of □ Recent Iron □ Stunted or Sa □ Other (Explage) 	ed Leaves (B9) (311) Intebrates (B13) Ilfide Odor (C1) izospheres alon Reduced Iron (C Reduced Iron (C Reduction in Till Itressed Plants (g Living Roots ((C4) ed Soils (C6)		(2 or more required) Water Stained Leav (MLRA 1, 2, 4A, ar Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Positio Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat	Aydrology Indicators (min. of of Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) Soil Cracks (B6) tion Visible on Ae	one required; c	 Water-Staina Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain 7) 	ed Leaves (B9) (311) irtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till itressed Plants (in in Remarks)	g Living Roots ((C4) ed Soils (C6)	C3)	(2 or more required) Water Stained Leave (MLRA 1, 2, 4A, and Drainage Patterns of Dry-Season Water Saturation Visible of Geomorphic Positio Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Humm	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab	Addicators (min. of of e Water (A1) (ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ervations: (ater Present?)	one required; c) rial Imagery (B Yes Yes	Water-Staind Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explained) No ⊠ E No ⊠ E	ed Leaves (B9) (311) irtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till itressed Plants (in in Remarks)	g Living Roots (0 C4) ed Soils (C6) D1) (LRR A)	C3)	(2 or more required) Water Stained Leav (MLRA 1, 2, 4A, ar Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Positio Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation	Addicators (min. of of e Water (A1) (ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ervations: (ater Present? le Present? Present?	one required; c) rial Imagery (B Yes []	□ Water-Staind □ Salt Crust (E □ Aquatic Invertion □ Hydrogen Site □ Oxidized Rh □ Presence of □ Recent Iron □ Stunted or State □ Other (Explain 7) No ⊠ □ No ⊠ □	ed Leaves (B9) (311) irtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till itressed Plants (in in Remarks)	g Living Roots (0 C4) ed Soils (C6) D1) (LRR A)	C3)	(2 or more required) Water Stained Leave (MLRA 1, 2, 4A, and Drainage Patterns of Dry-Season Water Saturation Visible of Geomorphic Positio Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Humm	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C	Addicators (min. of of e Water (A1) (ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ervations: (ater Present? le Present? Present? Capillary fringe)) rial Imagery (B Yes □ Yes □ Yes ⊠	 Water-Staina Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain No ⊠ E No ⊠ E No ⊠ E No □ E	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A)	C3) Wetlan	(2 or more required) Water Stained Leave (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Humm Md Hydrology Present?	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C	Addicators (min. of of e Water (A1) (ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ervations: (ater Present? le Present? Present? Capillary fringe)) rial Imagery (B Yes □ Yes □ Yes ⊠	Water-Staind Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explained) No ⊠ E No ⊠ E	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A)	C3) Wetlan	(2 or more required) Water Stained Leave (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Humm Md Hydrology Present?	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C	Addicators (min. of of e Water (A1) (ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ervations: (ater Present? le Present? Present? Capillary fringe)) rial Imagery (B Yes □ Yes □ Yes ⊠	 Water-Staina Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain No ⊠ E No ⊠ E No ⊠ E No □ E	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A)	C3) Wetlan	(2 or more required) Water Stained Leave (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Humm Md Hydrology Present?	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4)
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C Describe F Remarks:A	Atthough soil satu	one required; c) rial Imagery (B Yes □ Yes □ Yes ⊠ tream gauge, r	 Water-Staim Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain 7) No ⊠ E No □ E nonitoring well, ae nt, wetland hydroloce	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A) <u>15</u> ious inspections	C3) Wetlan), if availa	(2 or more required) Water Stained Leave (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Humm Md Hydrology Present?	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4) Yes □ No ⊠
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C Describe F Remarks:A	Addicators (min. of of e Water (A1) (ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ervations: (ater Present? le Present? Present? Capillary fringe) Recorded Data (S	one required; c) rial Imagery (B Yes □ Yes □ Yes ⊠ tream gauge, r	 Water-Staim Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain 7) No ⊠ E No □ E nonitoring well, ae nt, wetland hydroloce	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A) <u>15</u> ious inspections	C3) Wetlan), if availa	(2 or more required) Water Stained Leave & 4B) (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Hummed Md Hydrology Present? able:	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4) Yes □ No ⊠
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C Describe F Remarks:A	Atthough soil satu	one required; c) rial Imagery (B Yes □ Yes □ Yes ⊠ tream gauge, r	 Water-Staim Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain 7) No ⊠ E No □ E nonitoring well, ae nt, wetland hydroloce	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A) <u>15</u> ious inspections	C3) Wetlan), if availa	(2 or more required) Water Stained Leave & 4B) (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Hummed Md Hydrology Present? able:	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4) Yes □ No ⊠
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C Describe F Remarks:A	Atthough soil satu	one required; c) rial Imagery (B Yes □ Yes □ Yes ⊠ tream gauge, r	 Water-Staim Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain 7) No ⊠ E No □ E nonitoring well, ae nt, wetland hydroloce	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A) <u>15</u> ious inspections	C3) Wetlan), if availa	(2 or more required) Water Stained Leave & 4B) (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Hummed Md Hydrology Present? able:	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4) Yes □ No ⊠
Wetland H Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundat Field Obse Surface W Water Tab Saturation (Includes C Describe F Remarks:A	Atthough soil satu	one required; c) rial Imagery (B Yes □ Yes □ Yes ⊠ tream gauge, r	 Water-Staim Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain 7) No ⊠ E No □ E nonitoring well, ae nt, wetland hydroloce	ed Leaves (B9) (311) rrtebrates (B13) ulfide Odor (C1) izospheres along Reduced Iron (C Reduction in Till tressed Plants (in in Remarks) Depth (Inches): Depth (Inches): Depth (Inches):	g Living Roots (0 C4) D1) (LRR A) <u>15</u> ious inspections	C3) Wetlan), if availa	(2 or more required) Water Stained Leave & 4B) (MLRA 1, 2, 4A, and Drainage Patterns Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (I FAC-Neutral Test (Raised Ant Mounds Frost-Heave Hummed Md Hydrology Present? able:	nd 4B) (B10) Table (C2) on Aerial Imagery (C9) on (D2) O3) D5) s (D6) (LRR A) nocks (D4) Yes □ No ⊠

Project/Site: Green Mountain PRD		City/Co	unty: <u>Camas</u>				
Applicant/Owner: Green Mountain Land, LLC			State: W				
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho				o, Range: _20, 2N, 3E			
Landform (hillslope, terrace, etc.): footslope		Local relief: Co		Slope (%): <u>0-39</u>	6		
Subregion (LRR): A2	Lat: 45.647	<u>′1</u>	Long:-122.4560 Datum: NAD83				
Soil Map Unit Name: <u>MIA</u> , <u>McBee silt loam</u>				WI classification: none			
Are climatic / hydrologic conditions on the site typical for							
Are Vegetation, Soil, or Hydrology significantly				Circumstances" present? Yes⊠ No□ any answers in Remarks.)			
Are Vegetation, Soil, or Hydrology naturally pr		-					
SUMMARY OF FINDINGS – Attach site map		sampling po	oint locatio	ons, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes ⊠ No [Hydric Soils Present? Yes ⊠ No [Wetland Hydrology Present? Yes ⊠ No []	within a V	mpled Area Wetland?	Yes⊠ No⊡			
	of Wetland J	J. All three wet	land parame	eters are met, therefore the test plot was sampled withi	na		
wetland.							
VEGETATION (Use scientific names)]		
T 0	Absolute	Dominant	Indicator	Dominance Test Worksheet			
Tree Stratum (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status	Number of Dominant Species 1 (/	•		
1	%			That Are OBL, FACW, or FAC:	A)		
2	<u>%</u>						
3. 4.	<u>%</u>			Total Number of Dominant	B)		
Total Cover:	<u>%</u>			Species Across All Strata:)		
	70			100 (/	A/B)		
				Percent of Dominant Species	VD)		
Sapling/Shrub Stratum (Plot size: 15 ft. radius)				That Are OBL, FACW, or FAC			
1				Prevalence Index worksheet			
2	%			Total % Cover of: Multiply by:			
3				OBL species x 1=			
4	<u>%</u>			FACW species x 2=			
5	%			FAC species x 3=			
Total Cover:	%			FACU species x 4=			
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius) 1. <i>Phalaris arundinacea</i>	000/	200		UPL species x 5= Column Totals: (A)	(P)		
Phalaris arundinacea Z. Lotus corniculatus	<u>80%</u> 15%	yes no	FACW FAC	Column Totals: (A) Prevalence Index = B/A=	(B)		
3. Schedonorus arundinaceus	5%	no	FAC	Hydrophytic Vegetation Indicators:			
4.	J /0	110	170	□ 1 – Rapid Test for Hydrophytic Vegetation			
	%			\boxtimes 2 – Dominance Test is >50%			
5.	%			\square 3 - Prevalence Index is $\leq 3.0^{1}$			
6.				4 - Morphological Adaptations ¹ (Provide			
	%			supporting data In Remarks or on a separate	sheet)		
7.	%				ŕ		
8.	%			Wetland Non-Vascular Plants ¹			
Total Cover:	100%			Problematic Hydrophytic Vegetation ¹ (Explain))		
Woody Vine Stratum (Plot size: <u>15</u> ft radius)							
1	%			¹ Indicators of hydric soil and wetland hydrology			
2	%			Must be present, unless disturbed or problematic.			
Total Cover:	%						
				Hydrophytic Vegetation Present?			
% Bare Ground in Herb Stratum 0%				Yes⊠ No			
Remarks:The dominance test was met due to over 50	% of domina	nt species beir	ng OBL, FAC				

Profile Descr	ription: (Desc	ribe to the dep	oth needed to do	cument the indi	cator or conf	irm the	e absence of indicators.)	
Depth	Matrix	< Comparison of the second sec		Redox Featu	res			
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/2	60%	7.5YR 4/6	40%	С	М	silty clay loam	
		%		%				
		<u>%</u>		<u>%</u>				
·		<u>%</u>		<u>%</u>	<u> </u>			
		<u>%</u>		%				
· ·		<u> </u>		<u> </u>				
·		- <u> </u>		<u> </u>				<u> </u>
Hydric Soil II Histosal (A Histic Epip Black Histi Hydrogen Depleted E Thick Dark Sandy Mu Sandy Gle Restrictive L Type: Depth (inchess Remarks: Hyd	ndicators: (Ap A1) bedon (A2) ic (A3) Sulfide (A4) Below Dark Su < Surface (A12 cky Minerals (eyed Matrix (S4 ayer (if prese s):	oplicable to all urface (A11) S1) 4) int): tor F6 was met	LRRs, unless o Sandy Redo Stripped Ma Loamy Muc Loamy Gley Depleted M Redox Dark Depleted D Redox Depleted D because the laye	therwise noted.) ox (S5) atrix (S6) ky Mineral (F1) (e ved Matrix (F2) atrix (F3) a Surface (F6) ark Surface (F7) ressions (F8)	except MLRA	1) Hy	ns. ² Location: PL=Pore Linin Indicators for Problemati 2 cm Muck (A10) Red Parent Material (TF2 Very Shallow Dark Surfa Other (Explain in Remark ³ Indicators of hydrophytic very Wetland hydrology must ydric Soil Present? e upper 12 inches of the soil, a	c Hydric Soils 2) ce (TF12) (s) egetation and be present Yes⊠ No⊡
_	rology Indica						Secondary Indicator (2 or more required)	
Primary Indica	ators (min. of o	one required; cr	neck all that apply	/)				
Inundation	er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or crust (B4) sits (B5) oil Cracks (B6) o Visible on Ae) rial Imagery (Ba	□ Salt Crust (□ Aquatic Inve □ Hydrogen S ☑ Oxidized RI □ Presence o □ Recent Iron □ Stunted or S □ Other (Expla	ed Leaves (B9) (B11) ertebrates (B13) sulfide Odor (C1) hizospheres along f Reduced Iron (C Reduction in Tille Stressed Plants (I hin in Remarks)	Living Roots 4) ed Soils (C6)		 Drainage Pattern Dry-Season Wat 	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) ition (D2) (D3) t (D5) nds (D6) (LRR A)
Field Observ				Donth /last);				
Surface Wate Water Table F Saturation Pre (Includes Cap	Present? esent?	Yes □ Yes □ Yes ⊠	No 🖂 🛛 🛛	Depth (Inches): Depth (Inches): _ Depth (Inches): 5		We	tland Hydrology Present?	Yes 🛛 No 🗌
		tream gauge, n	nonitoring well, a	erial photos, previ	ous inspectior	ns), if a	vailable:	
Remarks:Wet	tland hydrolog	y primary indica	ntor A3 was met b	ecause soil satur	ation was pre	sent 5	inches below the soil surface,	and soil saturation 12
		sidered wetland						

Project/Site: Green Mountain PRD		City/Co	unty: Camas		(2016
Applicant/Owner: Green Mountain Land, LLC	fmonn	Cooti-	State: W	A Sampling Point , Range: 20, 2N, 3E	: 9J
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Hof					$\Omega_{\rm cons} (0/) = \Omega_{\rm cons}$
Landform (hillslope, terrace, etc.): <u>footslope</u>		Local relief: Co			Slope (%): <u>0-3%</u>
Subregion (LRR): A2	Lat: 45.647	1	Long:-122.	4560 Datum: NAE	183
Soil Map Unit Name: <u>MIA, McBee silt loam</u>	r this time of				
Are climatic / hydrologic conditions on the site typical fo					
Are Vegetation⊠, Soil□, or Hydrology□ significantly				Circumstances" present? Yes No	
Are Vegetation, Soil, or Hydrology naturally pro				any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	-	ampling po	int locatio	ons, transects, important feature	es, etc.
Hydrophytic Vegetation Present? Yes ⊠ No ⊡ Hydric Soils Present? Yes □ No ⊠ Wetland Hydrology Present? Yes □ No ⊠ Remarks: Test plot located northeast of Wetland J. Ve present, the test plot is determined to not be sampled w]] getation sigr	within a N	bed due to g	Yes No	ophytic vegetation is
VEGETATION (Use scientific names)					
Tree Stratum (Plot size:30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1	%			Number of Dominant Species	1 (A)
2	%			That Are OBL, FACW, or FAC:	
3	%			Total Number of Deminent	
4	%			Total Number of Dominant Species Across All Strata:	1 (B)
Total Cover:	%			Species Across Air Strata.	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)				Percent of Dominant Species That Are OBL, FACW, or FAC	<u> 100 </u> (A/B)
4	%			Prevalence Index worksheet	
2.					Multiply by:
0	0/			OBL species x 1=	
	%			FACW species x 2=	
4 5	%			FAC species x 3=	
Total Cover:	%			FACU species x 4=	
Herb Stratum (Plot size: 5 ft radius)	,,,			UPL species x 5=	
1. Lolium perenne	90%	yes	FAC	Column Totals: (A)	(B)
2. Lotus corniculatus	5%	no	FAC	Prevalence Index = B/A	
3. Schedonorus arundinaceus	5%	no	FAC	Hydrophytic Vegetation Indicators	
4.			17.0	1 – Rapid Test for Hydrophytic	
	%			\boxtimes 2 – Dominance Test is >50%	regetation
5.	%			\square 3 - Prevalence Index is <3.0 ¹	
6.				4 - Morphological Adaptations ¹	(Provide
	%			supporting data In Remarks or	
7.	%				
8.	%			Wetland Non-Vascular Plants ¹	
Total Cover:	100%			Problematic Hydrophytic Veget	ation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>15</u> ft radius)					
1	%			¹ Indicators of hydric soil and wetland	hydrology
2	%			Must be present, unless disturbed or	problematic.
Total Cover:	%				
				Hydrophytic Vegetation Present?	
% Bare Ground in Herb Stratum 0%					Yes⊠ No□
	% of domina	nt snecies heir		W or FAC	
<u>% Bare Ground in Herb Stratum 0%</u> Remarks:The dominance test was met due to over 50 ^o	% of dominar	nt species beir	ng OBL, FAC	Hydrophytic Vegetation Present?	Yes⊠ No□

Profile De	escription: (Desc	ribe to the dep	oth needed to d	ocument the indi	cator or co	nfirm t	he absence of indicators.)
Depth	Matrix	ć		Redox Featu	res			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc	² Texture	Remarks
0-10	10YR 3/3	50%		%			silty clay loam	See Remarks Below
0-10	10YR 3/2	50%		%			silty clay loam	See Remarks Below
10-16	10YR 3/2	85%	5YR 4/6	15%	С	M	silty clay loam	
		- <u>%</u>		<u> </u>				·
		<u> </u>		<u>%</u>				
i		<u>%</u>		<u>%</u>				
		%		%				
Hydric Sc Histosa Histic I Black I Hydrog Deplet Thick I Sandy	bil Indicators: (A j al (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ed Below Dark Su Dark Surface (A12 Mucky Minerals (pplicable to all urface (A11) 2) S1)	LRRs, unless of Sandy Rec Stripped M Loamy Mu Loamy Gle Depleted N Redox Dar Depleted D	otherwise noted.) dox (S5) latrix (S6) cky Mineral (F1) (e eyed Matrix (F2) Matrix (F3) ck Surface (F6) Dark Surface (F7)			ains. ² Location: PL=Pore Indicators for Proble ☐ 2 cm Muck (A10) ☐ Red Parent Material ☐ Very Shallow Dark S ☐ Other (Explain in Re ³ Indicators of hydrophyt	matic Hydric Soils (TF2) surface (TF12) marks)
-	Gleyed Matrix (Se		🗌 Redox Dep	pressions (F8)			Wetland hydrology i	nust be present
Туре:	ve Layer (if prese	ent):					Hydric Soil Present?	Yes⊡ No⊠
Depth (inc				10 1 1 1 1 1 1		0.11.12		oma of the soil profile from 0-
HYDRO								
Wetland I	Hydrology Indica	itors:					Secondary India	
Primary Ir	ndicators (min. of	one required; cl	heck all that app	ly)			<u>(2 or more requ</u>	neu)
☐ Surfac ☐ High W ☐ Satura ☐ Water ☐ Sedimo ☐ Drift Do ☐ Algal N ☐ Iron De ☐ Surfac ☐ Inunda	e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or crust (B4) eposits (B5) e Soil Cracks (B6 titon Visible on Ae)	 Water-Stai Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Expl 	ned Leaves (B9) (l Living Roc 4) ed Soils (C6	ots (C3) 6)	Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutral Raised Ant I	4A, and 4B) tterns (B10) Water Table (C2) isible on Aerial Imagery (C9) Position (D2) itard (D3)
Surface W Water Tab Saturation (Includes	Servations: Vater Present? De Present? Present? Capillary fringe) Recorded Data (S	Yes Yes Yes Yes	No ⊠ No ⊠ No ⊠	Depth (Inches): Depth (Inches): _ Depth (Inches): _ aerial photos, previ			Vetland Hydrology Preser	nt? Yes □ No ⊠
Describe	Coorden Dala (C	acan yauye, I	normoning well, a					
Remarks:	No wetland hydro	logy indicators	were met at this	test plot.				

Project/Site: <u>Green Mountain PRD</u> Applicant/Owner: Green Mountain Land, LLC		City/County:Camas/Clark State: WA			: <u>2/29/2016</u> 9 Point: 10G
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho	ffmann	Sectio		, Range: 20, 2N, 3E	· · · · · · · · · · · · · · · · · · ·
Landform (hillslope, terrace, etc.): footslope		Local relief: Co		· · · · · · · · · · · · · · · · · · ·	Slope (%):0-5%
Subregion (LRR): A2	Lat: 45.647	7 1	Long:-122.	4560 Datum:	: NAD83
Soil Map Unit Name: DoB, Dollar loam				WI classification: none	
Are climatic / hydrologic conditions on the site typical for	or this time of	year? Yes⊠	No (If ı	no, explain Remarks.)	
Are Vegetation, Soil, or Hydrology significantl				Circumstances" present? Yes	No
Are Vegetation, Soil, or Hydrology naturally p				iny answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map			-		atures, etc.
Hydrophytic Vegetation Present? Yes 🛛 No [,	
Hydrophylic Vegetation Present? Yes ⊠ No [Hydric Soils Present? Yes □ No [Wetland Hydrology Present? Yes □ No [\triangleleft	Is the Sar within a V	mpled Area Netland?	Yes□ No⊠	
Remarks: Test plot located southeast of the southern	depression of	f Wetland G ar	nd northwest	of Wetland U. Although hydrophy	ytic vegetation is present,
no hydric soil or wetland hydrology indicators were pre					
VEGETATION (Use scientific names)	Abaaluta	Deminent	Indiantar	Dominance Toot Workshoot	
Trop Strotum (Dist size:20 ft radius)	Absolute	Dominant	Indicator	Dominance Test Worksheet	
<u>Tree Stratum</u> (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status FACU	Number of Dominant Species	2 (4)
1. Quercus garryana	20%	yes	FACU	That Are OBL, FACW, or FAC:	<u> </u>
2.	%				
3	<u>%</u>			Total Number of Dominant	
4	<u>%</u>			Species Across All Strata:	<u> </u>
Total Cover:	20%				
				Percent of Dominant Species	60 (A/B)
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> radius)				That Are OBL, FACW, or FAC	
1. Rubus ursinus	20%	ves	FACU	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 Cover:	20%			FACU species	x 4=
Herb Stratum (Plot size: 5 ft radius)				UPL species	x 5=
1. Festuca rubra	30%	yes	FAC	Column Totals:	(A) (B)
2. Schedonorus arundinaceus	30%	yes	FAC	Prevalence Index	
3.	%			Hydrophytic Vegetation Indic	
4.				□ 1 – Rapid Test for Hydror	
	%			2 – Dominance Test is >5	
5.	%			3 - Prevalence Index is ≤	
6.				4 - Morphological Adapta	tions ¹ (Provide
	%				rks or on a separate sheet)
7.	%				. ,
8.	%			Wetland Non-Vascular Pl	lants ¹
Total Cover:	60%			Problematic Hydrophytic	Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft radius)					
1. Rubus armeniacus	30%	yes	FAC	¹ Indicators of hydric soil and we	etland hydrology
2.	%			Must be present, unless disturb	bed or problematic.
Total Cover:	30%				
				Hydrophytic Vegetation Prese	nt?
% Bare Ground in Herb Stratum <u>40%</u>					Yes⊠ No⊡
Remarks:Trace amount of <i>Juncus effusus</i> (FACW) ar	nd Phalaris a	undinacea (FA	CW/) 40% o	f bareground covered in unknown	
dominance test was met due to over 50% of dominant					i dead weed. The
	species being	JOBL, FACW,	UI FAC.		

Depth	Matrix			Redox Featu			_	
(inches)	Color (moist)	%	Color (mois		Туре1	Loc ²	Texture	Remarks
<u>0-12</u> 12-16	10YR 3/3 10YR 3/3	<u> 100% </u> 50%		<u>%</u> %			silt loamsilt loam	See Remarks Below
12-16	10YR 4/6	<u> </u>		%%			Silt loam	See Remarks Below
12-10	1011(4/0	<u> </u>		<u> </u>				See Remarks Below
		<u> </u>		%			<u> </u>	
		<u> </u>		%				
		<u> </u>		%				
		<u> </u>		<u> </u>				
¹ Type: (C=Concentration		M=Reduced M		or Coated Sand	d Grair	ns. ² Location: PL=Pore Lin	ning M=Matrix
				s otherwise noted.)			Indicators for Problema	
Histos		-p	Sandy R				2 cm Muck (A10)	
	Epipedon (A2)		☐ Stripped				Red Parent Material (T	F2)
	(Very Shallow Dark Sur	
Black	Histic (A3)		🗌 Loamy N	/lucky Mineral (F1) (except MLRA 1	1)	Other (Explain in Rema	
	gen Sulfide (A4)			Gleyed Matrix (F2)				
	ted Below Dark Su	urface (A11)	•	d Matrix (F3)				
•	Dark Surface (A12	. ,		ark Surface (F6)				
	Mucky Minerals (Dark Surface (F7)			³ la diantana af huadana hudia.	
			· ·	Pepressions (F8)			³ Indicators of hydrophytic	•
-	Gleyed Matrix (S			repressions (Fo)			Wetland hydrology mu	ist be present
Restrictiv	ve Layer (if prese	nt):						
Type						ни	dric Soil Present?	
Type:						ily	dife Son Fresent?	Yes⊟ No⊠
Depth (ind	ches):							
		tod of a mixed	matrix from 12	2 to 16 inches below	the soil surface			
HYDRO								
	LOGY							
		tors:					Secondary Indicat	ore
	LOGY Hydrology Indica	tors:					Secondary Indicat	
Wetland	Hydrology Indica		neck all that an	pply)			Secondary Indicat (2 or more require	
Wetland			neck all that ap	oply)			(2 or more require	d)
Wetland Primary Ir	Hydrology Indica		-		except MLRA	1, 2, 4	(2 or more require	d) Leaves (B9)
Wetland Primary Ir	Hydrology Indica ndicators (min. of o e Water (A1)		-	tained Leaves (B9) (except MLRA	1, 2, 4	(2 or more require	d) Leaves (B9) A, and 4B)
Wetland Primary Ir Surfac High V	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2)		U Water-Si	tained Leaves (B9) (st (B11)	except MLRA	1, 2, 4	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte	d) Leaves (B9) A, and 4B) rrns (B10)
Wetland Primary Ir Surfac High V	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ition (A3)		☐ Water-Si ☐ Salt Crus ☐ Aquatic	tained Leaves (B9) (st (B11) Invertebrates (B13)	except MLRA	1, 2, 4	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2)
Wetland Primary Ir Surfac High V Satura Water	Hydrology Indica ndicators (min. of o ce Water (A1) Vater Table (A2) ation (A3) Marks (B1)		☐ Water-Si ☐ Salt Crus ☐ Aquatic I ☐ Hydroge	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1)	-		(2 or more require Water Stained (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9)
Wetland Primary Ir Surfac High V Satura Water Sedim	Hydrology Indica ndicators (min. of o ce Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2)		U Water-Si Salt Crus Aquatic I Hydroge	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along	g Living Roots ((2 or more require Water Stained (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po	d) Leaves (B9) A, and 4B) rrns (B10) ater Table (C2) ble on Aerial Imagery (C9) psition (D2)
Wetland Primary In Surfac High V Satura Water Sedim Drift D	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) reposits (B3)		Water-Si Salt Crus Aquatic I Hydroge	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C	g Living Roots (24)		(2 or more require Water Stained (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita	d) Leaves (B9) A, and 4B) rrns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3)
Wetland Primary In Surfac High V Satura Water Sedim Drift D Algal N	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) nent Deposits (B2) Peposits (B3) Mat or crust (B4)		Water-S Salt Crus Aquatic Hydroge Oxidized Presence	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till	g Living Roots (C4) ed Soils (C6)		(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To	d) Leaves (B9) A, and 4B) Irns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) Ird (D3) est (D5)
Wetland Primary In Surfac High V Satura Water Sedim Drift D Algal N Iron D	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) nent Deposits (B2) veposits (B3) Mat or crust (B4) eposits (B5)	one required; cł	Water-S Salt Crus Aquatic Hydroge Oxidized Presenc Recent I Stunted	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (g Living Roots (C4) ed Soils (C6)		(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W. Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo	d) Leaves (B9) A, and 4B) Irns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surfac	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) veposits (B3) Mat or crust (B4) eposits (B5) ce Soil Cracks (B6)	one required; cł	□ Water-Si □ Salt Crus □ Aquatic I □ Hydroge □ Oxidized □ Presence □ Recent I □ Stunted □ Other (E)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till	g Living Roots (C4) ed Soils (C6)		(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To	d) Leaves (B9) A, and 4B) Irns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Surfac	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) nent Deposits (B2) veposits (B3) Mat or crust (B4) eposits (B5)	one required; cł	□ Water-Si □ Salt Crus □ Aquatic I □ Hydroge □ Oxidized □ Presence □ Recent I □ Stunted □ Other (E)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (g Living Roots (C4) ed Soils (C6)		(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W. Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo	d) Leaves (B9) A, and 4B) Irns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A)
Wetland Primary Ir Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surfac Inunda	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) veposits (B3) Mat or crust (B4) eposits (B5) ce Soil Cracks (B6) ation Visible on Ae	one required; cł	□ Water-Si □ Salt Crus □ Aquatic I □ Hydroge □ Oxidized □ Presence □ Recent I □ Stunted □ Other (E)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (g Living Roots (C4) ed Soils (C6)		(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W. Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo	d) Leaves (B9) A, and 4B) Irns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surfac Inunda Field Obs	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) veposits (B3) Mat or crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae servations:	one required; ch) rial Imagery (B	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (I kplain in Remarks)	g Living Roots (C4) ed Soils (C6)		(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W. Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo	d) Leaves (B9) A, and 4B) Irns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surfac Inunda Field Obs Surface V	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) veposits (B3) Mat or crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae servations: Vater Present?	one required; ch) rial Imagery (B3 Yes 🗌	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (I cplain in Remarks) Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3)	(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surfac Surface V Water Tal	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) reposits (B3) Mat or crust (B4) eposits (B5) re Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present?	one required; ch) rial Imagery (Bi Yes □ Yes □	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presenci Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3)	(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W. Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surface Inunda Field Obs Surface V Water Tal Saturation	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) attion (A3) Marks (B1) eent Deposits (B2) reposits (B3) Mat or crust (B4) eposits (B5) re Soil Cracks (B6) attion Visible on Ae servations: Vater Present? ble Present? in Present?	one required; ch) rial Imagery (B3 Yes 🗌	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (I cplain in Remarks) Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3)	(2 or more require Water Stained (MLRA 1, 2, 44) Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Surfac Innuda Field Obs Surface V Water Tal Saturation (Includes)	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) reposits (B3) Mat or crust (B4) eposits (B5) re Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present? n Present? Capillary fringe)	one required; ch) rial Imagery (B7 Yes Yes Yes Yes Yes	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3) Wet	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Surfac Innuda Field Obs Surface V Water Tal Saturation (Includes)	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) reposits (B3) Mat or crust (B4) eposits (B5) re Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present? n Present? Capillary fringe)	one required; ch) rial Imagery (B7 Yes Yes Yes Yes Yes	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3) Wet	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surface Inunda Field Obs Surface V Water Tal Saturatior (Includes	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) reposits (B3) Mat or crust (B4) eposits (B5) re Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present? n Present? Capillary fringe)	one required; ch) rial Imagery (B7 Yes Yes Yes Yes Yes	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3) Wet	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Iron D Surface Inunda Field Obs Surface V Water Tal Saturatior (Includes	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) eeposits (B3) Mat or crust (B4) eposits (B5) ee Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present? on Present? Capillary fringe) Recorded Data (S	one required; ch) rial Imagery (B7 Yes Yes Yes Yes Yes	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3) Wet	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Grad Surface V Water Tal Saturation (Includes) Describe	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) eeposits (B3) Mat or crust (B4) eposits (B5) ee Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present? on Present? Capillary fringe) Recorded Data (S	one required; ch) rial Imagery (B7 Yes Yes Yes Yes Yes	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3) Wet	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Grad Surface V Water Tal Saturation (Includes) Describe	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) eeposits (B3) Mat or crust (B4) eposits (B5) ee Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present? on Present? Capillary fringe) Recorded Data (S	one required; ch) rial Imagery (B7 Yes Yes Yes Yes Yes	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3) Wet	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
Wetland Primary In Surfac High V Satura Vater Sedim Drift D Algal N Grad Surface V Water Tal Saturation (Includes) Describe	Hydrology Indica ndicators (min. of o e Water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) eeposits (B3) Mat or crust (B4) eposits (B5) ee Soil Cracks (B6) ation Visible on Ae servations: Vater Present? ble Present? on Present? Capillary fringe) Recorded Data (S	one required; ch) rial Imagery (B7 Yes Yes Yes Yes Yes	Water-Si Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E) 7)	tained Leaves (B9) (st (B11) Invertebrates (B13) n Sulfide Odor (C1) I Rhizospheres along e of Reduced Iron (C ron Reduction in Till or Stressed Plants (cplain in Remarks) Depth (Inches): Depth (Inches):	g Living Roots (24) ed Soils (C6) D1) (LRR A)	(C3) Wet	(2 or more require Water Stained A, & 4B) (MLRA 1, 2, 4A Drainage Patte Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	d) Leaves (B9) A, and 4B) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D4)
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Project/Site: Green Mountain PRD	City/Co	unty:Camas			
Applicant/Owner: Green Mountain Land, LLC			State: W	1 0	oint: 11G
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho				o, Range: <u>20, 2N, 3E</u>	
Landform (hillslope, terrace, etc.): footslope		Local relief: Co			Slope (%): <u>0-3%</u>
Subregion (LRR): A2	Lat: 45.647	'1	Long: <u>-122</u> .		NAD83
Soil Map Unit Name: MIA, McBee silt loam				IWI classification: none	
Are climatic / hydrologic conditions on the site typical for					
Are Vegetation, Soil, or Hydrology significantly				Circumstances" present? Yes 🛛 🛛 No	
Are Vegetation, Soil, or Hydrology naturally pr	oblematic?	(If need	led, explain a	any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing s	ampling po	int locatio	ons, transects, important feat	ures, etc.
Hydrophytic Vegetation Present?Yes ⊠No [Hydric Soils Present?Yes ⊠No [Is the Sa	mpled Area Wetland?	· · ·	,
Wetland Hydrology Present? Yes 🛛 No					
Remarks: Test plot located within the southwestern de	epression of \	Netland G. All	three wetlar	nd parameters are met, therefore the	test plot was sampled
within a wetland. VEGETATION (Use scientific names)					
	Absolute	Dominant	Indicator	Dominance Test Worksheet	
Tree Stratum (Plot size:30 ft radius)	% Cover	Species?	Status		
1	%			Number of Dominant Species	3 (A)
2.	%			That Are OBL, FACW, or FAC:	(*)
3.	%			_	
4.	%			Total Number of Dominant	3 (B)
Total Cover:	%			Species Across All Strata:	(=)
	70				100 (A/B)
				Percent of Dominant Species	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u> radius)				That Are OBL, FACW, or FAC	
1. Typha latifolia	80%	yes	OBL	Prevalence Index worksheet	
2	%			Total % Cover of:	Multiply by:
3	%				x 1=
4	%			FACW species	x 2=
5	%			FAC species	x 3=
Total Cover:	80%			FACU species	x 4=
Herb Stratum (Plot size: <u>5</u> ft radius)				UPL species	x 5=
1. Phalaris arundinacea	50%	yes	FACW	Column Totals:	(A) (B)
2. Juncus effusus	50%	yes	FACW	Prevalence Index = E	3/A=
3.	%			Hydrophytic Vegetation Indicate	ors:
4.	0/			I – Rapid Test for Hydrophy	
	%			2 – Dominance Test is >50%	
5.	%			3 - Prevalence Index is ≤3.0) ¹
6.				4 - Morphological Adaptatio	ns ¹ (Provide
	%			supporting data In Remarks	
7.	%	·			
8.	%			Wetland Non-Vascular Plan	ts ¹
Total Cover:	100%			Problematic Hydrophytic Ve	
Woody Vine Stratum (Plot size: 15 ft radius)					- ` ' ' '
1	%			¹ Indicators of hydric soil and wetla	and hydrology
2.	%			Must be present, unless disturbed	or problematic.
Total Cover:	%				•
				Hydrophytic Vegetation Present	2
				Hydrophytic vegetation Present	
% Bare Ground in Herb Stratum 0%	o				Yes⊠ No□
Remarks: The dominance test was met due to over 50	1% of domina	nt species beir	ng OBL, FAC	SVV, or FAC.	

Depth Matrix		Redox Featu	roc			
(inches) Color (moist) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-2 10YR 5/1 100%		%			silty clay loam	
2-16 10YR 5/1 60%	10YR 4/6	40%	С	М	silty clay loam	
<u>%</u>		<u> </u>				
<u>%</u>		<u> % </u>				
		<u> </u>			· ·	
<u> </u>		<u> </u>			·· ·	
<u>%</u>		%			·· ·	
¹ Type: C=Concentration, D=Depletion				nd Grains		
Hydric Soil Indicators: (Applicable to					Indicators for Problematio	c Hydric Soils
Histosal (A1)	Sandy Redox (2 cm Muck (A10) Red Parent Material (TF2	N
Histic Epipedon (A2)		(30)			Very Shallow Dark Surfac	
Black Histic (A3)	🗌 Loamy Mucky M	/lineral (F1) (e	except MLRA		Other (Explain in Remark	
Hydrogen Sulfide (A4)	Loamy Gleyed		•			
Depleted Below Dark Surface (A11)	Depleted Matrix	(F3)				
Thick Dark Surface (A12)	Redox Dark Su	rface (F6)				
Sandy Mucky Minerals (S1)	Depleted Dark	Surface (F7)		:	³ Indicators of hydrophytic ve	getation and
Sandy Gleyed Matrix (S4)	Redox Depress	ions (F8)			Wetland hydrology must	be present
Restrictive Layer (if present):						
Turney				L la cal	Iria Cail Dracant?	
Туре:				пуа	Iric Soil Present?	Yes⊠ No⊡
Depth (inches):						
Remarks: Hydric soil indicator F3 was m						
beginning within 10 inches of the soil su	rface. A value of 4 or me	ore and a chro	oma of 2 or le	ess was o	bserved within the soil profile	e, which is required in a
depleted matrix.						
HYDROLOGY						
					O	
Wetland Hydrology Indicators:					Secondary Indicators (2 or more required)	S
Primary Indicators (min. of one required	check all that apply)				<u>(</u>	
					Water Stained Le	
Surface Water (A1)	Water-Stained		aveant MI D			aves (B9)
High Water Table (A2)				A 1, 2, 4A	(MLRA 1, 2, 4A, a	and 4B)
Saturation (A3)	Salt Crust (B11			A 1, 2, 4A	(MLRA 1, 2, 4A, a Drainage Pattern	and 4B) s (B10)
	Aquatic Inverte	orates (B13)	ехсерт міск	A 1, 2, 4A	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate	and 4B) s (B10) er Table (C2)
Water Marks (B1)	Aquatic Inverte	orates (B13) le Odor (C1)	·		A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9)
☐ Water Marks (B1) ☐ Sediment Deposits (B2)	 ☐ Aquatic Inverter ☐ Hydrogen Sulfice ☑ Oxidized Rhizo 	orates (B13) le Odor (C1) spheres along	Living Roots		A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) ition (D2)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) 	Aquatic Inverted Hydrogen Sulfic Oxidized Rhizo Presence of Re	orates (B13) de Odor (C1) spheres along duced Iron (C	y Living Roots	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) ition (D2) (D3)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) 	Aquatic Inverted Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille	Living Roots 4) ed Soils (C6)	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) Iron Deposits (B5) 	Aquatic Invertee Hydrogen Sulfid Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (E	Living Roots 4) ed Soils (C6)	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) 	 ☐ Aquatic Inverted ☐ Hydrogen Sulfice ☑ Oxidized Rhizo ☐ Presence of Ree ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in 	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (E	Living Roots 4) ed Soils (C6)	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) Iron Deposits (B5) 	 ☐ Aquatic Inverted ☐ Hydrogen Sulfice ☑ Oxidized Rhizo ☐ Presence of Ree ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in 	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (E	Living Roots 4) ed Soils (C6)	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery 	 ☐ Aquatic Inverted ☐ Hydrogen Sulfice ☑ Oxidized Rhizo ☐ Presence of Ree ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in 	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (E	Living Roots 4) ed Soils (C6)	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) 	 ☐ Aquatic Invertel ☐ Hydrogen Sulfid ☑ Oxidized Rhizo ☐ Presence of Re ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in (B7) 	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (E	Living Roots 4) ed Soils (C6)	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A)
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery Field Observations:	 ☐ Aquatic Invertel ☐ Hydrogen Sulfid ☑ Oxidized Rhizo ☐ Presence of Re ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in (B7) 	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks)	y Living Roots 4) ed Soils (C6) D1) (LRR A)	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A)
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠	Aquatic Invertee Hydrogen Sulfid Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in (B7)	brates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches):	u Living Roots 4) ed Soils (C6) D1) (LRR A) 0	s (C3)	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hum	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A)
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠ (Includes Capillary fringe)	Aquatic Invertee Hydrogen Sulfid Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in (B7) No ⊠ Dep No □ Dep No □ Dep	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u>	9 Living Roots (4) (4) (1) (LRR A)	s (C3) Wetl	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A) nmocks (D4)
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠	Aquatic Invertee Hydrogen Sulfid Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in (B7) No ⊠ Dep No □ Dep No □ Dep	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u>	9 Living Roots (4) (4) (1) (LRR A)	s (C3) Wetl	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A) nmocks (D4)
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠ (Includes Capillary fringe)	Aquatic Invertee Hydrogen Sulfid Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in (B7) No ⊠ Dep No □ Dep No □ Dep	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u>	9 Living Roots (4) (4) (1) (LRR A)	s (C3) Wetl	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) tion (D2) (D3) t (D5) ds (D6) (LRR A) nmocks (D4)
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠ (Includes Capillary fringe) Describe Recorded Data (Stream gauge Remarks:Water seeping in at approximation	 ☐ Aquatic Invertel ☐ Hydrogen Sulfid ☑ Oxidized Rhizo ☐ Presence of Re ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in (B7) No □ Dep No □	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u> photos, previ	ULiving Roots 4) ed Soils (C6) D1) (LRR A) 0 0 ous inspectio	s (C3) Weth ons), if ava	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr and Hydrology Present?	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) (D3) t (D5) ds (D6) (LRR A) nmocks (D4) Yes ⊠ No □
 Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠ Saturation Present? Yes ⊠ (Includes Capillary fringe) Describe Recorded Data (Stream gauge)	 ☐ Aquatic Invertel ☐ Hydrogen Sulfid ☑ Oxidized Rhizo ☐ Presence of Re ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in (B7) No □ Dep No □	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u> photos, previ	ULiving Roots 4) ed Soils (C6) D1) (LRR A) 0 0 ous inspectio	s (C3) Weth ons), if ava	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr and Hydrology Present?	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) (D3) t (D5) ds (D6) (LRR A) nmocks (D4) Yes ⊠ No □
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠ (Includes Capillary fringe) Describe Recorded Data (Stream gauge Remarks:Water seeping in at approximation	 ☐ Aquatic Invertel ☐ Hydrogen Sulfid ☑ Oxidized Rhizo ☐ Presence of Re ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in (B7) No □ Dep No □	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u> photos, previ	ULiving Roots 4) ed Soils (C6) D1) (LRR A) 0 0 ous inspectio	s (C3) Weth ons), if ava	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr and Hydrology Present?	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) (D3) t (D5) ds (D6) (LRR A) nmocks (D4) Yes ⊠ No □
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠ (Includes Capillary fringe) Describe Recorded Data (Stream gauge Remarks:Water seeping in at approximation	 ☐ Aquatic Invertel ☐ Hydrogen Sulfid ☑ Oxidized Rhizo ☐ Presence of Re ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in (B7) No □ Dep No □	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u> photos, previ	ULiving Roots 4) ed Soils (C6) D1) (LRR A) 0 0 ous inspectio	s (C3) Weth ons), if ava	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr and Hydrology Present?	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) (D3) t (D5) ds (D6) (LRR A) nmocks (D4) Yes ⊠ No □
□ Water Marks (B1) □ Sediment Deposits (B2) □ Drift Deposits (B3) □ Algal Mat or crust (B4) □ Iron Deposits (B5) □ Surface Soil Cracks (B6) □ Inundation Visible on Aerial Imagery Field Observations: Surface Water Present? Yes □ Water Table Present? Yes ⊠ Saturation Present? Yes ⊠ (Includes Capillary fringe) Describe Recorded Data (Stream gauge Remarks:Water seeping in at approximation	 ☐ Aquatic Invertel ☐ Hydrogen Sulfid ☑ Oxidized Rhizo ☐ Presence of Re ☐ Recent Iron Re ☐ Stunted or Stre ☐ Other (Explain in (B7) No □ Dep No □	orates (B13) de Odor (C1) spheres along duced Iron (C duction in Tille ssed Plants (I n Remarks) th (Inches): <u>1</u> th (Inches): <u>0</u> photos, previ	ULiving Roots 4) ed Soils (C6) D1) (LRR A) 0 0 ous inspectio	s (C3) Weth ons), if ava	A, & 4B) (MLRA 1, 2, 4A, a Drainage Patterns Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard FAC-Neutral Test Raised Ant Moun Frost-Heave Hurr and Hydrology Present?	and 4B) s (B10) er Table (C2) e on Aerial Imagery (C9) (D3) t (D5) ds (D6) (LRR A) nmocks (D4) Yes ⊠ No □

Project/Site: Green Mountain PRD Applicant/Owner: Green Mountain Land, LLC		City/Co	unty: <u>Camas</u> State: W			
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho	ffmann	Sectio		, Range: 20, 2N, 3E	I 0	
Landform (hillslope, terrace, etc.): footslope		Local relief: Co		, range. <u>20, 211, 52</u>	Slope (%	<pre>(4):0-3%</pre>
Subregion (LRR): A2	Lat: 45.647		Long:-122.	4560 Date	um: NAD83	0). <u>00</u> ,0
Soil Map Unit Name: MIA, McBee silt loam				WI classification: none		
Are climatic / hydrologic conditions on the site typical for	or this time of	year? Yes⊠	No (If	no, explain Remarks.)		
Are Vegetation, Soil, or Hydrology significantl				Circumstances" present? Yes	☑ No□	
Are Vegetation, Soil, or Hydrology naturally p	roblematic?	(If need	ed, explain a	any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map	showing s	ampling po	int locatio	ons, transects, important	features, etc	-
Hydrophytic Vegetation Present? Yes 🛛 No						
Hydric Soils Present? Yes 🗌 No 🛛			npled Area			
Wetland Hydrology Present? Yes D No		within a V		Yes⊡ No⊠		
Remarks: Test plot located within Wetland G. Althoug						
because no wetland hydrology was present within 12 in						
high, and the layer from 12-18 inches is technically a d	epleted matrix	x based on val	ue and chroi	ma, however the layer begins t	too deep within the	ne soil profile
to meet hydric soil specifications of an F3.						
VEGETATION (Use scientific names)						
	AL	D	L. P. d.			
Tree Stratum (Dist size:20 ft radius)	Absolute	Dominant	Indicator	Dominance Test Workshee	et	
<u>Tree Stratum</u> (Plot size: <u>30</u> ft radius) 1.	<u>% Cover</u> %	Species?	Status	Number of Dominant Specie	<i>2</i>	(A)
	<u>~~~</u> %			That Are OBL, FACW, or FA		(A)
2	<u>~~~</u> %					
4.	<u>%</u>			Total Number of Dominant	4	(B)
Total Cover:	<u> </u>			Species Across All Strata:	_	
	///				75	(A/B)
				Percent of Dominant Specie	S	(,,,_)
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> radius)	2224		F 1 0 1 1	That Are OBL, FACW, or FA		
1. <u>Spiraea douglasii</u>	60%	yes	FACW	Prevalence Index workshe		
2. <u>Rubus ursinus</u>	<u> </u>	yes	FACU	Total % Cover of:	Multiply x 1=	by:
3. 4.	<u>~~~</u> %			OBL species FACW species	x 1= x 2=	
5.	<u>%</u>			FAC species	x 2=	
Total Cover:	75%			FACU species	x 4=	
Herb Stratum (Plot size: 5 ft radius)				UPL species	x 5=	
1. Schedonorus arundinaceus	50%	yes	FAC	Column Totals:	(A)	(B)
2.	%			Prevalence Ind		~ /
3.	%			Hydrophytic Vegetation In	dicators:	
4.	0/			1 – Rapid Test for Hyd	Irophytic Vegetar	tion
	%			2 – Dominance Test is	s >50%	
5	%			3 - Prevalence Index is		
6.	%			4 - Morphological Ada		
				supporting data In Rer	narks or on a se	parate sheet)
7	<u> % </u> %			U Wetland Non-Vascular		
8 Total Cover:	50%			Problematic Hydrophy		
Woody Vine Stratum (Plot size: <u>15</u> ft radius)	3078					
1. Rubus armeniacus	5%	yes	FAC	¹ Indicators of hydric soil and	wetland hydrolo	av
2.	<u> </u>			Must be present, unless dist		
Total Cover:	5%					
				Hydrophytic Vegetation Pre	sent?	
% Bare Ground in Herb Stratum 50%				··· · · · · · · · · · · · · · · · · ·		i⊠ No⊡
Remarks: The dominance test was met due to over 50)% of dominar	nt species bein	g OBL, FAC	W, or FAC.		

Profile Description: (Describe to the dep	th needed to docun	nent the ind	icator or con	firm the	absence of indicators.)	
Depth Matrix		Redox Featu	ILOS			
(inches) Color (moist) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-12 10YR 3/3 100%		%			silty clay loam	
<u>12-18</u> 10YR 4/2 90%	10YR 4/4	10%	C	Μ	silty clay loam	
<u>%</u>		<u>%</u>				
<u>%</u>		<u> % </u> %				
		<u>%</u>				
<u> </u>		%				
<u> </u>		%				
¹ Type: C=Concentration, D=Depletion, R				nd Grain		
Hydric Soil Indicators: (Applicable to all)		Indicators for Problematic H	lydric Soils
☐ Histosal (A1) ☐ Histic Epipedon (A2)	Sandy Redox (S				□ 2 cm Muck (A10) □ Red Parent Material (TF2)	
		(00)			Very Shallow Dark Surface	(TF12)
Black Histic (A3)	🗌 Loamy Mucky N	/lineral (F1) (except MLR/	A 1)	Other (Explain in Remarks)	()
Hydrogen Sulfide (A4)	Loamy Gleyed I	Matrix (F2)				
Depleted Below Dark Surface (A11)	Depleted Matrix	: (F3)				
Thick Dark Surface (A12)	🗌 Redox Dark Su	· · ·				
Sandy Mucky Minerals (S1)	Depleted Dark	. ,			³ Indicators of hydrophytic vege	tation and
Sandy Gleyed Matrix (S4)	Redox Depress	ions (F8)			Wetland hydrology must be	present
Restrictive Layer (if present):						
Туре:				Hve	dric Soil Present?	
Type:				· · · y		Yes⊡ No⊠
Depth (inches):						
Remarks: Hydric soil indicators were not me high. Additionally, the layer from 12-18 inch soil profile to meet hydric soil specifications	es is technically a de					
HYDROLOGY						
Wetland Hydrology Indicators:					Secondary Indicators (2 or more required)	
Primary Indicators (min. of one required; ch	eck all that apply)					
					Water Stained Leav	()
Surface Water (A1) High Water Table (A2)	□ Water-Stained I □ Salt Crust (B11)			A 1, 2, 4/	A, & 4B) (MLRA 1, 2, 4A, an Drainage Patterns (
Saturation (A3)	Aquatic Inverte				Dry-Season Water	-
☐ Water Marks (B1)	Hydrogen Sulfic	. ,			Saturation Visible of	. ,
Sediment Deposits (B2)	Oxidized Rhizos			s (C3)	Geomorphic Positio	
Drift Deposits (B3)	Presence of Re	-		0 (00)	Shallow Aquitard (D	
Algal Mat or crust (B4)	Recent Iron Re	•	,		FAC-Neutral Test (
☐ Iron Deposits (B5)	Stunted or Stree	ssed Plants (D1) (LRR A)		Raised Ant Mounds	
Surface Soil Cracks (B6)	Other (Explain in				Frost-Heave Humm	ocks (D4)
Inundation Visible on Aerial Imagery (B7)					
Field Observations.						
Field Observations: Surface Water Present? Yes	No 🖂 🛛 Dep	th (Inches):				
Water Table Present? Yes		th (Inches):	18	Wet	land Hydrology Present?	
Saturation Present? Yes		th (Inches):			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Yes 🗌 No 🖂
(Includes Capillary fringe)		· · ·				
Describe Recorded Data (Stream gauge, m	onitoring well, aerial	photos, prev	vious inspectio	ons), if av	vailable:	
Remarks: Although the water table and soil		مالا من ما مالا الا م			is too door For indicators AD a	
						nd A3 to be
considered wetland hydrology, saturation a						nd A3 to be
						nd A3 to be
						nd A3 to be
						nd A3 to be

Project/Site: <u>Green Mountain PRD</u> Applicant/Owner: Green Mountain Land, LLC					npling Date: <u>2/29/2016</u> Sampling Point: 13G		
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho	ffmann	Sectio		, Range: 20, 2N, 3E	<u>.</u>		
Landform (hillslope, terrace, etc.): footslope		Local relief: Co		,	Slc	pe (%):C)-3%
Subregion (LRR): A2	Lat: 45.647		Long:-122.4	4560 Datur	n: NAD83		
Soil Map Unit Name: MIA, McBee silt loam				WI classification: none		-	
Are climatic / hydrologic conditions on the site typical for	or this time of	vear? Yes⊠	No (If r	no, explain Remarks.)			
Are Vegetation, Soil, or Hydrology significantly				Circumstances" present? Yes⊠	No		
Are Vegetation, Soil, or Hydrology naturally p				iny answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map		ampling po	int locatio	ns. transects. important	eatures	. etc.	
Hydrophytic Vegetation Present? Yes No [-			,		,	
Hydric Soils Present? Yes No 2			mpled Area				
Wetland Hydrology Present? Yes X No [within a \	Wetland?	Yes⊡ No⊠			
Remarks: Test plot located northeast of the northern		tland G. Althou	igh hydrophy	tic vegetation and wetland hydr	ology are	nresent	the test
plot was determined to not be sampled within a wetland any hydric soil indicators because they lacked any trac	d because the	e vegetation wa	as not strong				
VEGETATION (Use scientific names)							
Tree Stratum (Plot size:30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet			
1	%			Number of Dominant Species		3	(A)
2	%			That Are OBL, FACW, or FAC			
3	%			Total Number of Dominant			(=)
4	%			Species Across All Strata:	—	4	(B)
Total Cover:	%					75	
				Percent of Dominant Species	—	75	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft. radius)				That Are OBL, FACW, or FAC	;		
1	%			Prevalence Index workshee	t		
2	%		-	Total % Cover of:	Mu	Itiply by:	
3	%			OBL species	x 1=		
4				FACW species	x 2=		
5	%			FAC species	x 3=		
Total Cover:	%			FACU species	x 4=		
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius) 1. Schedonorus arundinaceus	50%	VOC	FAC	UPL species Column Totals:	x 5= (A)		(B)
2. Phalaris arundinacea	<u> </u>	yes yes	FAC	Prevalence Index	. ,		(D)
3. Cirsium vulgare	30%	ves	FACU	Hydrophytic Vegetation Ind			
4.		yes	1400	1 – Rapid Test for Hydr		netation	
7.	%			\boxtimes 2 – Dominance Test is :		getation	
5.	%			□ 3 - Prevalence Index is			
6.				4 - Morphological Adapt		rovide	
	%			supporting data In Rem			ate sheet)
7	<u>%</u>			Wetland Non-Vascular	Dianta ¹		
o Total Cover:	130%			Problematic Hydrophyti		on ¹ (Evol	ain)
Woody Vine Stratum (Plot size: <u>15</u> ft radius)	15070				, vegetati	on (Expi	any
1. Rubus armeniacus	20%	ves	FAC	¹ Indicators of hydric soil and w	vetland hv	drology	
2.	<u> </u>			Must be present, unless distu			.
Total Cover:	20%	·	-				
				Hydrophytic Vegetation Pres	ent?		
% Bare Ground in Herb Stratum 0%						Yes⊠	No
Remarks:The dominance test was met due to over 50	% of domina	nt enocioe boir		W/ or EAC		162	
Nemains. The dominance lest was met due to over 50		in species pell	IY UBL, FAC	VV, UI FAC.			

Profile De	escription: (Desc	ribe to the dep	oth needed to c	locument the ind	licator or co	nfirm th	e absence of indicators.)	
Depth	Matrix	ĸ		Redox Feat	ures			
(inches)	Color (moist)	%	Color (moist		Type ¹	Loc ²		Remarks
0-9	10YR 3/2	100%		%			silty clay loam	
9-16	10YR 4/2	100%		%			silty clay loam	See Remarks Below
		%		<u> </u>				
		<u>%</u>		<u> </u>				
		<u>%</u>		<u> </u>			· ·	
		<u>%</u>		%				
		%		%				
¹ Type: 0	C=Concentration,	D=Depletion, R	M=Reduced Ma	atrix, CS=Covered	or Coated S	and Gra	ains. ² Location: PL=Pore Li	
	oil Indicators: (Ap	pplicable to all			.)		Indicators for Problem	atic Hydric Soils
Histos			Sandy Re				2 cm Muck (A10)	
Histic I	Epipedon (A2)		Stripped N	Aatrix (S6)			Red Parent Material (1	
Black I	Histic (A3)			ucky Mineral (F1)	excent MI 6	ρ <u>Δ</u> 1)	Very Shallow Dark Sui Other (Explain in Rem	
	gen Sulfide (A4)		-	eyed Matrix (F2)				
	ed Below Dark Su	urface (A11)	Depleted					
	Dark Surface (A12	()	-	rk Surface (F6)				
	Mucky Minerals (Dark Surface (F7)			³ Indicators of hydrophytic	vogotation and
	Gleyed Matrix (S			pressions (F8)			Wetland hydrology mu	•
-	ve Layer (if prese							
Restriction								
Type:						н	lydric Soil Present?	
								Yes⊡ No⊠
Depth (inc								
							or F3 because a soil with a v	
	edoximorpnic con prominent redoxii			oils ala not meet n	yaric soli indi	cator Fb	6 because matrix colors of 3/	2 require 5% or more
uistinet of	prominent reduxi		itrations.					
HYDRO	LOGY							
	Hydrology Indica	tors					Secondary Indica	toro
wettanu	nyurology mulca	11015.					(2 or more require	
Primary Ir	ndicators (min. of	one required; ch	neck all that app	oly)			<u>(</u>	
	,	• · ·					Water Stained	Leaves (B9)
	e Water (A1)		U Water-Sta	ined Leaves (B9)	(except ML	RA 1, 2,	4A, & 4B) (MLRA 1, 2, 4	A, and 4B)
-	Vater Table (A2)		Salt Crust	: (B11)			Drainage Patte	
🛛 Satura	. ,		•	vertebrates (B13)			🗌 Dry-Season W	ater Table (C2)
	Marks (B1)			Sulfide Odor (C1)			Saturation Vis	ble on Aerial Imagery (C9)
	ent Deposits (B2)			Rhizospheres alor		ots (C3)	🗌 Geomorphic P	osition (D2)
	eposits (B3)			of Reduced Iron (Shallow Aquita	
-	Mat or crust (B4)			on Reduction in Ti	•	,	FAC-Neutral T	
1	eposits (B5)			r Stressed Plants	(D1) (LRR A)		ounds (D6) (LRR A)
	e Soil Cracks (B6)		_ 、 '	olain in Remarks)			Frost-Heave H	lummocks (D4)
🗌 Inunda	ation Visible on Ae	rial Imagery (B	7)					
Field Ohe								
	servations: Vater Present?	Yes 🗌	No 🖂	Depth (Inches):				
1	ble Present?	Yes 🖂		Depth (Inches):	6	w	etland Hydrology Present?	,
	n Present?	Yes 🖂		Depth (Inches):	_			Yes 🛛 No 🗌
(Includes	Capillary fringe)	—	—		_	ĺ		
	Recorded Data (S	stream gauge, n	nonitoring well,	aerial photos, prev	vious inspect	ions), if	available:	
Domortice	Mator toble and -	aturation ware	oth procest with	thin 10 inches of t		0	ing hydrology indicators AQ	and A2
Remarks:	water table and S	aturation were l	Journ present Wi	unin 1∠ inches of t	ne soli sunac	e, meet	ing hydrology indicators A2	anu AJ.
L								

Project/Site: Green Mountain PRD	City/Co	unty: <u>Camas</u>				
Applicant/Owner: Green Mountain Land, LLC			State: W		Point: 14G	
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho				o, Range: <u>20, 2N, 3E</u>		
Landform (hillslope, terrace, etc.): footslope		Local relief: Co			Slope (%):0)-3%
Subregion (LRR):A2	Lat: 45.647	' 1	Long: -122.		NAD83	
Soil Map Unit Name: MIA, McBee silt loam				IWI classification: none		
Are climatic / hydrologic conditions on the site typical for						
Are Vegetation, Soil, or Hydrology significantly	y disturbed?	Ar	ea "Normal (Circumstances" present? Yes 🛛 N	No 🗌	
Are Vegetation, Soil, or Hydrology naturally pr	roblematic?	(If need	led, explain a	any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map	showing s	ampling po	int locatio	ons, transects, important fea	atures, etc.	
Hydrophytic Vegetation Present? Yes No [,,		
Hydric Soils Present? Yes 🛛 No [mpled Area Wetland?	Yes⊠ No⊡		
Wetland Hydrology Present? Yes 🛛 No						
Remarks: Test plot located within the northern portion	of Wetland C	G. All three we	tland parame	eters are met, therefore the test plo	t was sampled v	within a
wetland.						
VEGETATION (Use scientific names)						
	A h a a luita	Deminant	la dia ata a	Deminence Test Workshoet		
	Absolute	Dominant	Indicator	Dominance Test Worksheet		
Tree Stratum (Plot size:30 ft radius)	% Cover	Species?	Status			
1	%		-	Number of Dominant Species	2	(A)
2	%			That Are OBL, FACW, or FAC:		
3	%			Total Number of Dominant		
4	%			Total Number of Dominant	2	(B)
Total Cover:	%			Species Across All Strata:		
				Percent of Dominant Species	100	(A/B)
Sopling/Shrub Stratum (Dist size: 15 ft radius)				Percent of Dominant Species		
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> radius)	0.00/			That Are OBL, FACW, or FAC		
1. <u>Typha latifolia</u>	80%	yes	OBL	Prevalence Index worksheet	Marildin Ir. Inc.	
2	<u>%</u>			Total % Cover of:	Multiply by:	
3	<u>%</u>			OBL species	x 1=	
4	<u>%</u>			FACW species	x 2=	
5	%			FAC species	x 3=	
Total Cover:	80%			FACU species	x 4=	
Herb Stratum (Plot size: 5 ft radius)				UPL species	x 5=	
1. Phalaris arundinacea	100%	yes	FACW	Column Totals:	(A)	(B)
2	%			Prevalence Index =		
3	%			Hydrophytic Vegetation Indica		
4.	%			1 – Rapid Test for Hydroph		
				2 – Dominance Test is >50		
5	%			3 - Prevalence Index is ≤3.		
6.	%			4 - Morphological Adaptati		
				supporting data In Remark	s or on a separa	ate sheet)
7	%					
8.	%			Wetland Non-Vascular Pla	nts ¹	
Total Cover:	100%			Problematic Hydrophytic V	'egetation ¹ (Expl	ain)
Woody Vine Stratum (Plot size: 15 ft radius)						
1	%			¹ Indicators of hydric soil and wet	land hydrology	
2.	%			Must be present, unless disturbe		c.
Total Cover:	%		-	· · ·	•	
				Hydrophytic Vegetation Presen	40	
				Hydrophytic vegetation Present		
% Bare Ground in Herb Stratum 0%					Yes⊠	No
Remarks: The dominance test was met due to over 50)% of domina	nt species beir	ng OBL, FAC	CW, or FAC.		

Profile D	escription: (Desc	ribe to the dep	th needed to doc	ument the indi	cator or co	onfirm	the a	bsence of indicators.)	
Depth	Matrix	ĸ		Redox Featu	ires				
(inches)	Color (moist)	<u> </u>	Color (moist)	%	Type ¹	Lo	DC ²	Texture	Remarks
0-6	10YR 4/1	100%		%				silty clay loam	
6-16	10YR 5/1	<u> </u>	7.5YR 4/6	<u>20%</u> %	С		M	clay loam	
		<u>%</u> %		%					
·		<u> </u>		<u>%</u> %					
		%		%					
		%		%					
1-		<u>%</u>		%		0	<u></u>	21	
	oil Indicators: (A)					Sand		. ² Location: PL=Pore Linin Indicators for Problemation	
Histos			Sandy Redox					2 cm Muck (A10)	
	Epipedon (A2)		Stripped Mati				Ľ	Red Parent Material (TF2	
			<u> </u>					Very Shallow Dark Surfac	
	Histic (A3)		Loamy Mucky		except ML	RA 1)	L	Other (Explain in Remark	S)
-	gen Sulfide (A4)		Loamy Gleye						
	ted Below Dark Su Dark Surface (A12	. ,	Depleted Mat	. ,					
	/ Mucky Minerals (,	Depleted Dark	. ,			3	Indiantara of hydrophytic yr	actation and
-	/ Gleyed Matrix (S	,	Redox Depre	. ,				Indicators of hydrophytic ve	•
-	ve Layer (if prese							Wetland hydrology must	be present
Restrict									
Type:							Hydı	ric Soil Present?	
Depth (in	choc):								Yes⊠ No⊡
		tor E2 was mot	dua ta a lavar bavi	na a doplotod n	ootrix with (20% o	r moro	chroma of 2 or less and is	at loast 6 inches thick
								chroma of 2 or less, which	
soil profil			·	·					
HYDRC									
Wetland	Hydrology Indica	tors:						Secondary Indicators	S
Primary I	ndicators (min. of	one required: ch	eck all that apply)					(2 or more required)	
								Water Stained Le	aves (B9)
Surfa	ce Water (A1)		U Water-Staine	d Leaves (B9) (except ML	.RA 1,	2, 4A		
-	Water Table (A2)		Salt Crust (B	11)				Drainage Pattern	
	ation (A3)		Aquatic Inver	. ,				Dry-Season Wate	
	Marks (B1)		Hydrogen Su						on Aerial Imagery (C9)
	nent Deposits (B2)		Oxidized Rhiz	-		ots (C	3)	Geomorphic Posi	
	Deposits (B3)		Presence of I	•	,	•		Shallow Aquitard	
-	Mat or crust (B4)					'		FAC-Neutral Test	
	eposits (B5)		Stunted or St	,	D1) (LRR A	A)		Raised Ant Moun	
	ce Soil Cracks (B6		Other (Explain	i in Remarks)				Frost-Heave Hum	IMOCKS (D4)
	ation Visible on Ae	rial imagery (B/)						
Field Ob	servations:							<u>.</u>	
	Water Present?	Yes 🗌	No 🛛 🛛 De	epth (Inches):					
Water Ta	ble Present?	Yes 🖂	No 🗌 🛛 De	epth (Inches):	12		Wetla	Ind Hydrology Present?	
1	n Present?	Yes 🖂	No 🗌 🛛 De	epth (Inches): (<u>)</u>				Yes 🛛 No 🗌
	Capillary fringe)					4')	:6	lable.	
Describe	Recorded Data (S	meann gauge, m	ionitoring well, aer	ai priotos, prev	ious inspec	uons)	, n ava	แลมเย.	
								hydrology indicators A2 and	A3. Additionally,
oxidized	rhizoshperes amor	ng living roots w	ere observed, which	ch is a primary	wetland hyd	drolog	y indic	ator (C3).	
L									

Project/Site: Green Mountain PRD		City/Co	ounty: <u>Camas</u>	
Applicant/Owner: Green Mountain Land, LLC			State: W	
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Ho	ffmann	Sectio	on, Township	o, Range: _20, 2N, 3E
Landform (hillslope, terrace, etc.): footslope		Local relief: C	onvex	Slope (%): <u>0-5%</u>
Subregion (LRR): A2	Lat: 45.647	'1	Long:-122.	
Soil Map Unit Name: DoB, Dollar loam				IWI classification: none
Are climatic / hydrologic conditions on the site typical fe				
Are Vegetation, Soil, or Hydrology significant				Circumstances" present? Yes 🛛 No
Are Vegetation, Soil, or Hydrology naturally p	roblematic?	(If need	led, explain a	any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing s	ampling po	oint locatio	ons, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	7			
Hydric Soils Present? Yes Ves			mpled Area	
Wetland Hydrology Present? Yes X No		within a	Wetland?	Yes□ No⊠
		etland M. Alth	nough hydrop	phytic vegetation and wetland hydrology are present, the test
				centrations required to be present within hydric soils with a
matrix of 3/1.				
VEGETATION (Use scientific names)		D	L. P. Atra	Dentire Technick
Tree Stratum (Plot size: <u>30</u> ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
	20%		FACU	Number of Dominant Species 3 (A)
		yes	FACO	Number of Dominant Species 3 (A) That Are OBL, FACW, or FAC:
2	<u> % </u> %			
4.	<u>%</u>			Total Number of Dominant 5 (B)
	20%			Species Across All Strata:
Total Cover:	20%			
				Percent of Dominant Species60 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft. radius)				That Are OBL, FACW, or FAC
1. Oemleria cerasiformis	15%	yes	FACU	Prevalence Index worksheet
2. Thuja plicata	10%	yes	FAC	Total % Cover of: Multiply by:
3. <u>Rubus ursinus</u>	5%	no	FACU	OBL species x 1=
4	%			FACW species x 2=
5	%			FAC species x 3=
Total Cover:	30%			FACU species x 4=
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius)				UPL species x 5=
1. Phalaris arundinacea	90%	yes	FAC	Column Totals: (A) (B)
2	%			Prevalence Index = B/A=
3.	%			Hydrophytic Vegetation Indicators:
4.	%			1 – Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
5	%			\square 3 - Prevalence Index is ≤3.0 ¹
6.	%			4 - Morphological Adaptations ¹ (Provide
				supporting data In Remarks or on a separate sheet)
7	%			
8	<u>%</u>			Wetland Non-Vascular Plants ¹
Total Cover:	90%			Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>15</u> ft radius)	400/		540	
1. <u>Rubus armeniacus</u>	10%	yes	FAC	¹ Indicators of hydric soil and wetland hydrology
2	<u>%</u>			Must be present, unless disturbed or problematic.
Total Cover:	10%			
				Hydrophytic Vegetation Present?
% Bare Ground in Herb Stratum <u>10%</u>				Yes⊠ No⊡
Remarks: Trace amount of Corylus cornuta (FACU). T	he dominance	e test was me	t due to over	50% of dominant species being OBL, FACW, or FAC.

Profile De	escription: (Desc	cribe to the dep	oth needed to d	locument the ind	icator or con	firm the a	absence of indicators.)	
Depth	Matri			Redox Feat	ures		_	
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/1	100%		%			gravelly clay loam	
		<u>%</u>		<u> </u>			· ·	
		%		<u> </u>				
		<u>%</u>		%	· · ·		· · <u> </u>	
		%		%				
		%		%			·	
1		%		%			2	
						nd Grains	s. ² Location: PL=Pore Lining	
Histos	oil Indicators: (A	pplicable to all	Sandy Re)		Indicators for Problematic	; nyaric solis
	Epipedon (A2)		Stripped N				Red Parent Material (TF2)
	r r ()						Very Shallow Dark Surfac	
	Histic (A3)		-	icky Mineral (F1)	except MLRA	A 1)	Other (Explain in Remark	s)
	gen Sulfide (A4)		•	eyed Matrix (F2)				
	ed Below Dark Su	()	Depleted I					
	Dark Surface (A12	,		rk Surface (F6)				
	Mucky Minerals (· · ·	- ·	Dark Surface (F7)			³ Indicators of hydrophytic ve	getation and
-	Gleyed Matrix (S		🗌 Redox De	pressions (F8)			Wetland hydrology must	be present
Restrictiv	ve Layer (if prese	ent):						
Type:						Hvd	Iric Soil Present?	
Type						iiye		Yes□ No⊠
Depth (inc	ches):							
Remarks:	Soils did not mee	et any of the rec	uirements for hy	dric soils becaus	e although the	matrix m	neets the color criteria of an F	F6, a matrix of 3/1
requires 2	2% or more redoxi	imorphic conce	ntrations.					
HYDRO	LOGY							
Wetland	Hydrology Indica	ators:					Secondary Indicators	3
	, ,,						(2 or more required)	-
Primary Ir	ndicators (min. of	one required; c	neck all that app	oly)				
— • •							Water Stained Le	
	e Water (A1)			ined Leaves (B9)	(except MLR)	A 1, 2, 4A		
Satura	Vater Table (A2)		Salt Crust				Drainage Patterns	
	Marks (B1)		•	vertebrates (B13) Sulfide Odor (C1)			•	on Aerial Imagery (C9)
	ent Deposits (B2)			Rhizospheres alor		(C3)	Geomorphic Posi	••••
	eposits (B3)			of Reduced Iron (s (C3)	Shallow Aquitard	
	Mat or crust (B4)			on Reduction in Til			FAC-Neutral Test	
-	eposits (B5)			Stressed Plants			Raised Ant Moun	. ,
	e Soil Cracks (B6)		lain in Remarks)			Frost-Heave Hum	
	ation Visible on Ae	,						
		that imagery (D	,					
Field Obs	servations:							
	Vater Present?	Yes 🗌	No 🖂	Depth (Inches):				
	ble Present?	Yes 🖂		Depth (Inches):		Wetl	and Hydrology Present?	
	Present?	Yes 🛛	No 🗌	Depth (Inches):	0			Yes 🛛 No 🗌
	Capillary fringe) Recorded Data (S	Stream dauge in		aerial nhotos nrev	vious inspectio	ns) if av	ailahle	
2000100				action prioroo, pro-				
Remarks:	Water table and s	aturation were	both present wit	hin 12 inches of t	ne soil surface	, meeting	hydrology indicators A2 and	I A3.

Project/Site: <u>Green Mountain PRD</u> Applicant/Owner: Green Mountain Land, LLC			unty: <u>Camas</u> / State: W		Sampling Date: 3/01/2016			
Investigator(s): M. MGrath, F. Naglich, J. Madriz, L.	Hoffmann	Sootio	Section, Township, Range: 20, 2N, 3			Sampling Point: <u>16M</u>		
				, range: 20, 2N, 3E			0.50/	
Landform (hillslope, terrace, etc.): footslope		Local relief: Co				Slope (%):	0-5%	
Subregion (LRR): <u>A2</u>	Lat: 45.647	7 1	Long:-122.		Datum:	NAD83		
Soil Map Unit Name: <u>DoB, Dollar Ioam</u>				WI classification: none				
Are climatic / hydrologic conditions on the site typica	al for this time of	year? Yes⊠	No∏ (If ı	no, explain Remarks.)				
Are Vegetation, Soil, or Hydrology signification	antly disturbed?	Ar	ea "Normal (Circumstances" preser	ıt? Yes⊠ N	o		
Are Vegetation, Soil, or Hydrology natural				any answers in Remarl		_		
SUMMARY OF FINDINGS – Attach site m		-				turos oto		
		amping po		ins, transects, inip		iures, eic.		
	lo 🖂	le the Sa	mpled Area					
Hydric Soils Present? Yes 🗌 N	lo 🖂		Wetland?	Vec 🗆 🛚	lo⊠			
Wetland Hydrology Present? Yes 🗌 N	lo 🖂	within a	wettand?	Yes 🗌 🛚 🗎				
Remarks: Test plot located southwest of the most	southwestern po	rtion of Wetlar	nd M. No wet	land indicators were p	resent. theref	fore the test p	ot was	
sampled within an upland area.				•				
VEGETATION (Use scientific names)								
	Absolute	Dominant	Indicator	Dominance Test W	orksheet			
Tree Stratum (Plot size:30 ft radius)	% Cover	Species?	Status					
	30%		FACU	Number of Dominan	t Species	2	(A)	
1. Quercus garryana		yes		That Are OBL, FAC		3	(A)	
2. Pseudotsuga menziesii	30%	yes	FACU		, or i Ao.			
3	%			Total Number of De	minant			
4	%			Total Number of Dor		6	(B)	
Total Cove	er: 60%			Species Across All S	strata:			
					- ·	50	(A/B)	
				Percent of Dominan				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u> radius)				That Are OBL, FAC	N, or FAC			
1. Thuja plicata	20%	yes	FAC	Prevalence Index w	/orksheet			
2. Cornus sericea	15%	yes	FACW	Total % Cove	r of:	Multiply by	:	
3. Rubus ursinus	10%	yes	FACU	OBL species		x 1=		
4.	%	yee	17100	FACW species		x 2=		
	<u> </u>				-		·	
5				FAC species	-	x 3=		
Total Cove	er: 45%			FACU species		x 4=		
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius)				UPL species		x 5=		
1	%			Column Totals:		(A)	(B)	
2.	%			Prevale	ence Index =	B/A=		
3.	%			Hydrophytic Veget	ation Indicat	ors:		
4.				1 – Rapid Tes			า	
	%			2 – Dominance			-	
5	%			3 - Prevalence				
J	/0							
6.	%			4 - Morphologi			roto obsati	
7				supporting dat	a in Remarks	s or on a sepa	rate sneet)	
7.	%					. 1		
8.	%			Wetland Non-Y				
Total Cove	er: %			Problematic H	ydrophytic Ve	egetation1 (Exp	olain)	
Woody Vine Stratum (Plot size: <u>15</u> ft radius)								
1. Rubus armeniacus	90%	yes	FAC	¹ Indicators of hydric	soil and wetla	and hydrology		
2.						, ,,		
Total Cove	er:							
				Hydrophytic Vegeta	tion Present	?		
% Bare Ground in Herb Stratum 100%						Yes	No⊠	
Total Cove Woody Vine Stratum (Plot size: <u>15</u> ft radius)	er: <u>%</u> 90% % 90%		FAC	Problematic H Indicators of hydric Must be present, un Hydrophytic Vegeta	ydrophytic Ve soil and weth less disturbed tion Present	egetation ¹ (Exp and hydrology d or problemat ? Yes	ic.] No	

Profile Descr	iption: (Desc	ribe to the de	pth needed to	o document	the indica	ator or conf	irm the	absence of indicators.)	
Depth	Matrix	¢		Redo	x Feature	25			
	olor (moist)	%	Color (mo			Type ¹	Loc ²	Texture	Remarks
0-8	10YR 3/2	100%			%			gravelly clay loam	
8-16	10YR 3/3	99%	7.5YR 4	/6	%	С	М	gravelly clay loam	
		<u>%</u>			<u>%</u>				
		- <u>%</u> %			<u>%</u> %				
·		<u>%</u> %			<u>%</u>				
		<u> </u>			%				
		<u> </u>			%				
¹ Type: C=Co	oncentration,	D=Depletion, R	M=Reduced	Matrix, CS=C	overed or	Coated Sa	nd Grain	s. ² Location: PL=Pore Lining	, M=Matrix
		oplicable to al			noted.)			Indicators for Problematic	Hydric Soils
Histosal (A				Redox (S5)				2 cm Muck (A10)	
Histic Epip	edon (A2)			d Matrix (S6)				 Red Parent Material (TF2) Very Shallow Dark Surface 	
Black Histic	c (A3)			Mucky Minera	al (F1) (av	cent MI RA	(1)	Other (Explain in Remarks	
Hydrogen S			-	Gleyed Matrix			,		?)
Depleted B	• •	urface (A11)	-	ed Matrix (F3)	((
Thick Dark			-	Dark Surface	(F6)				
Sandy Muc		,		ed Dark Surfa	. ,			³ Indicators of hydrophytic vec	uctation and
Sandy Muc				Depressions	. ,			Wetland hydrology must b	
Restrictive La				Depressions	(10)			vvetland hydrology must r	be present
Restrictive La	ayer (ii prese	iii).							
Туре:							Hy	dric Soil Present?	
							_		Yes⊡ No⊠
Depth (inches)									
								orphic concentrations, in whicl	n none were observed.
The layer from	n 8-16 inches	has a chroma t	that is too hig	h to meet any	hydric so	oil indicators	•		
HYDROLOG	2V								
Wetland Hydr	rology Indica	tors:						Secondary Indicators (2 or more required)	
Primary Indica	ators (min. of a	one required; c	heck all that a	(vlage					
				·PP')				Water Stained Lea	aves (R9)
Surface Wa	ater (A1)		□ Water-S	Stained Leave	es (B9) (e z	xcept MLR	A 1. 2. 4		
High Water			🔲 Salt Cru		() (•		Drainage Patterns	
Saturation	(A3)			Invertebrates	s (B13)			Dry-Season Wate	
U Water Marl	ks (B1)		Hydrog	en Sulfide Oc	or (C1)			Saturation Visible	on Aerial Imagery (C9)
Sediment D			Oxidize	d Rhizospher	es along l	Living Roots	s (C3)	Geomorphic Posit	
Drift Depos	• • • •			ce of Reduce	-	-	()	Shallow Aquitard	
Algal Mat c				Iron Reductio	-			FAC-Neutral Test	
Iron Depos				or Stressed				Raised Ant Mound	
Surface So	. ,)		xplain in Ren	-	., (,		Frost-Heave Hum	
		, rial Imagery (B			,				(_)
			- /						
Field Observa			_						
Surface Water		Yes 🗌	No 🖂	Depth (In					
	Procont?	Yes 🗌	No 🖂	Depth (In			Wet	land Hydrology Present?	
Water Table P			No 🖂	Depth (In	ches):				Yes 🗌 No 🖾
Water Table P Saturation Pre	esent?	Yes 🗌							
Water Table P Saturation Pre (Includes Cap	esent? illary fringe)			Il oprial about			no) if c	voilable:	
Water Table P Saturation Pre (Includes Cap	esent? illary fringe)	Yes tream gauge, r		II, aerial photo	os, previo	us inspectio	ns), if av	vailable:	
Water Table P Saturation Pre (Includes Cap	esent? illary fringe)			II, aerial photo	os, previo	us inspectio	ns), if av	vailable:	
Water Table P Saturation Pre (Includes Cap Describe Reco	esent? illary fringe) orded Data (S		monitoring we	•		us inspectio	ns), if av	vailable:	
Water Table P Saturation Pre (Includes Cap Describe Reco	esent? illary fringe) orded Data (S	tream gauge, r	monitoring we	•		us inspectio	ns), if av	vailable:	
Water Table P Saturation Pre (Includes Cap Describe Reco	esent? illary fringe) orded Data (S	tream gauge, r	monitoring we	•		us inspectio	ns), if av	vailable:	
Water Table P Saturation Pre (Includes Cap Describe Reco	esent? illary fringe) orded Data (S	tream gauge, r	monitoring we	•		us inspectio	ns), if av	vailable:	
Water Table P Saturation Pre (Includes Cap Describe Reco	esent? illary fringe) orded Data (S	tream gauge, r	monitoring we	•		us inspectio	ns), if av	railable:	

Project/Site: Green Mountain PRD Applicant/Owner: Green Mountain Land, LLC Investigator(s): M. MGrath, F. Naglich, J. Madriz, L. Hoffmann			ounty: <u>Camas</u> / State: W		Sampling Date: 3/01/2016 Sampling Point: 17B		
Landform (hillslope, terrace, etc.): footslope		Local relief: Co		, Nanye. 20, 211, 3E		Slope (%):0)_5%
				4500	Detum. N		J-5%
Subregion (LRR): A2	Lat: 45.647	<u> </u>	_ Long: <u>-122.</u>		Datum: N	IAD83	
Soil Map Unit Name: DoB, Dollar loam				WI classification: none			
Are climatic / hydrologic conditions on the site typical for						_	
Are Vegetation , Soil , or Hydrology significantly				Circumstances" prese			
Are Vegetation, Soil, or Hydrology naturally p				any answers in Remai	,		
SUMMARY OF FINDINGS – Attach site map	showing s	ampling po	oint locatio	ns, transects, im	portant feat	ures, etc.	
Hydrophytic Vegetation Present? Yes ⊠ No [Hydric Soils Present? Yes ⊠ No [Wetland Hydrology Present? Yes ⊠ No [Remarks: Test plot located within the southern portion		within a V	mpled Area Wetland? tland parame		No	was sampled v	within a
VEGETATION (Use scientific names)							
	Absolute	Dominant	Indicator	Dominance Test V	Vorksheet		
Tree Stratum (Plot size:30 ft radius)	% Cover	Species?	Status				
1. Fraxinus latifolia	30%	yes	FACW	Number of Dominar		6	(A)
2.	%			That Are OBL, FAC	W, or FAC:		
3.	%						
4.	%			Total Number of Do		6	(B)
Total Cover:	30%			Species Across All	Strata:		
				D		100	(A/B)
				Percent of Dominar		-	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)	4 50/		0.01	That Are OBL, FAC			
1. <u>Oenanthe sarmentosa</u>	15%	yes	OBL	Prevalence Index			
2. <u>Rosa pisocarpa</u>	10%	yes	FAC	Total % Cove		Multiply by:	
3. Rubus ursinus	5%	no	FACU	OBL species		<1=	
4. Populus trichocarpa	5%	no	FAC	FACW species		< 2=	
5	%			FAC species	>	< 3=	
Total Cover:	35%			FACU species		< 4=	
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius)				UPL species		< 5=	
1. Juncus sp.	10%	yes	FAC	Column Totals:	((A)	(B)
2. Rumex sp.	5%	yes	FAC	Preval	ence Index = E	3/A=	
3.	%			Hydrophytic Vege	tation Indicato	ors:	
4.	%			1 – Rapid Tes	st for Hydrophy	tic Vegetation	
	70			🛛 2 – Dominano	e Test is >50%	6	
5.	%			3 - Prevalenc	e Index is ≤3.0	1	
6.	0/			4 - Morpholog	ical Adaptatior	ns ¹ (Provide	
	%				ta In Remarks		ate sheet)
7.	%						
8.	%				Vascular Plant		
Total Cover:	15%			Problematic H	lydrophytic Ve	getation ¹ (Expl	ain)
Woody Vine Stratum (Plot size: <u>15</u> ft radius)						-	
1. Rubus armeniacus	10%	yes	FAC	¹ Indicators of hydric	soil and wetla	nd hydrology	
2.	%			Must be present, ur	less disturbed	or problemation	c.
Total Cover:	10%						
% Bare Ground in Herb Stratum 85% Remarks:20% of bare ground was covered in moss. 7	The dominanc	ce test was me	et due to over	Hydrophytic Vegeta		Yes⊠	

Profile D	escription: (Desc	ribe to the dep	th needed to docu	ment the ind	icator or con	firm the abser	nce of indicators.)			
Depth	Matrix	r.		Redox Featu	ires					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-16	10YR 3/2	95%	5YR 4/6	5%	C	RC	sandy silt loam			
		<u>%</u>		<u>%</u>						
		<u>%</u> %		%						
		<u>%</u> %		<u>%</u> %						
		<u> </u>		<u> </u>						
		%		%						
		%		%						
							ocation: PL=Pore Linir			
		pplicable to all	LRRs, unless othe)		cators for Problemati	c Hydric Soils		
Histos	al (A1) Epipedon (A2)		Sandy Redox (cm Muck (A10) ed Parent Material (TF:	o)		
	Epipedon (AZ)			x (30)			ery Shallow Dark Surfa			
Black	Histic (A3)		Loamy Mucky	Mineral (F1) (except MLRA		her (Explain in Remar			
	gen Sulfide (A4)		Loamy Gleyed		-					
Deplet	ed Below Dark Su	rface (A11)	Depleted Matri	ix (F3)						
Thick	Dark Surface (A12)	🛛 Redox Dark Su	urface (F6)						
🗌 🗌 Sandy	Mucky Minerals (S1)	Depleted Dark	Surface (F7)		³ Indic	ators of hydrophytic ve	egetation and		
Sandy	Gleyed Matrix (S4	4)	Redox Depres	sions (F8)		W	etland hydrology must	t be present		
Restrictiv	ve Layer (if prese	nt):								
Turner										
Type:						nyaric S	oil Present?	Yes⊠ No⊡		
Depth (in	ches):									
Remarks:	Hydric soil indicat	or F6 was met	because the layer w	vas at least 4 i	nches thick w	ithin the upper	12 inches of the soil, a	and had a matrix value of		
3 or less,	and a chroma of 2	or less, with 59	% or more distinct o	r prominent re	dox concentra	ations.				
HYDRO										
		4.0.20.					Coordon do disetto			
wetiand	Hydrology Indica	tors:					Secondary Indicator (2 or more required)			
Primary I	ndicators (min. of c	one required; ch	neck all that apply)					/		
,	ι	<i>i i</i>					Water Stained L	eaves (B9)		
	e Water (A1)		Water-Stained		(except MLR)	A 1, 2, 4A, & 4				
-	Vater Table (A2)		Salt Crust (B1	-			Drainage Patterns (B10)			
Satura			Aquatic Inverte	. ,			Dry-Season Water Table (C2)			
	Marks (B1)		Hydrogen Sulfi			(- -)	Saturation Visible on Aerial Imagery (C9)			
	ent Deposits (B2)		Oxidized Rhizo			s (C3)	Geomorphic Pos			
	eposits (B3)		Presence of R	•	,		Shallow Aquitare			
-	Mat or crust (B4)		Recent Iron Re				FAC-Neutral Tes			
	eposits (B5) e Soil Cracks (B6)		Stunted or Stre		DT) (LRR A)		Raised Ant Mou			
	ation Visible on Ae		Other (Explain	in Remarks)			Frost-Heave Hur	ninocks (D4)		
		nai inagery (Di)							
Field Obs	servations:									
Surface V	Vater Present?	Yes 🗌		oth (Inches):						
	ble Present?	Yes 🖂		oth (Inches):		Wetland H	lydrology Present?			
	n Present?	Yes 🛛	No 🗌 🛛 Dep	oth (Inches):	0			Yes 🛛 No 🗌		
	Capillary fringe)	troom dougo in	nonitoring well, aeria	l photos prov	vious insportio	ns) if available	. .			
Describe	Necolueu Dala (S	i cam yauye, li	ionitoring well, aella	a priotos, prev		no, i avaliable	J.			
Remarks:	Water table and sa	aturation were b	ooth present within 1	12 inches of th	ne soil surface	, meeting hydro	ology indicators A2 an	d A3.		
1										

Project/Site: Green Mountain PRD Applicant/Owner: Green Mountain Land, LLC	ifmann		unty: <u>Camas</u> State: <u>W</u>		Sampling Date: 3/01/2016 Sampling Point: 18B	
Investigator(s): <u>M. MGrath, F. Naglich, J. Madriz, L. Hof</u> Landform (hillslope, terrace, etc.): <u>footslope</u> Subregion (LRR):A2		Local relief: Co			Slope (%): <u>(</u> AD83)-5%
Soil Map Unit Name: DoB, Dollar Ioam Are climatic / hydrologic conditions on the site typical for Are Vegetation, Soil, or Hydrology significantly Are Vegetation, Soil, or Hydrology naturally pr SUMMARY OF FINDINGS – Attach site map	or this time of disturbed? oblematic?	year? Yes⊠ Ar (If need	No <u></u> (If ea "Normal (ed, explain a	WI classification: <u>none</u> no, explain Remarks.) Circumstances" present? Yes⊠ No[any answers in Remarks.)		
Hydrophytic Vegetation Present? Yes No Hydric Soils Present? Yes No Wetland Hydrology Present? Yes No Remarks: Test plot located north of Wetland B. No we		Is the Sar within a V	mpled Area Wetland?	Yes□ No⊠		
VEGETATION (Use scientific names)		Destinat		Denimon Terri Westerlei		
<u>Tree Stratum</u> (Plot size: <u>30</u> ft radius) 1. <i>Populus trichocarpa</i>	Absolute % Cover 70%	Dominant Species? yes	Indicator Status FAC	Dominance Test Worksheet Number of Dominant Species	1	(A)
2. 3. 4.	<u>%</u> %			That Are OBL, FACW, or FAC: Total Number of Dominant	6	(B)
Total Cover:	70%			Species Across All Strata: Percent of Dominant Species	16	_ (A/B)
Sapling/Shrub Stratum (Plot size: <u>15</u> ft. radius) 1. Gaultheria shallon	30%	yes	FACU	That Are OBL, FACW, or FAC Prevalence Index worksheet		
2. Rubus ursinus 3. Symphoricarpos albus	<u>30%</u> 20%	yes yes	FACU FACU	Total % Cover of: OBL species	Multiply by: 1=	
 4. Acer circinatum 5. Oemleria cerasiformis Total Cover: 	15% 5% 100%	no	FAC FACU	FACW species x FAC species x	2= 3= 4=	
Herb Stratum (Plot size: <u>5</u> ft radius) 1. Polystichum munitum	30%	yes	FACU	UPL species x Column Totals: (A	5= \)	(B)
2. <u>Galium aparine</u> 3.	<u>25%</u> %	yes	FACU	Prevalence Index = B/ Hydrophytic Vegetation Indicator		
4 5 6	% %			 1 – Rapid Test for Hydrophyti 2 – Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations supporting data In Remarks of 	ic Vegetation s ¹ (Provide	
7. 8	% % 55%			Wetland Non-Vascular Plants Problematic Hydrophytic Veg	1	
Woody Vine Stratum (Plot size: 15 ft radius) 1.	<u> </u>			¹ Indicators of hydric soil and wetlan Must be present, unless disturbed of	id hydrology	
Total Cover:		er of OBL, FAC	CW, and FAC	Hydrophytic Vegetation Present? C plant observed within the vicinity of t	Yes the test plot v	

Profile Description: (Describe to the de	epth needed to docu	ment the ind	icator or con	firm the	absence of indicators.)	
Depth Matrix		Redox Featu	ires			
(inches) Color (moist) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-12 10YR 3/3 100%		%			silty loam	
<u>12-16</u> 10YR 3/3 <u>95%</u>	10YR 4/6	5%	C	М	silty loam	
<u>%</u>		%				
<u>%</u>		<u>%</u> %				
<u> </u>		<u> </u>				
· ·		<u> </u>				
<u> </u>		%				
¹ Type: C=Concentration, D=Depletion,				nd Grain		
Hydric Soil Indicators: (Applicable to a)		Indicators for Problematic	Hydric Soils
Histosal (A1)	Sandy Redox				2 cm Muck (A10)	
Histic Epipedon (A2)	Stripped Matrix	x (S6)			 Red Parent Material (TF2) Very Shallow Dark Surface 	(TE12)
Black Histic (A3)	Loamy Mucky	Mineral (F1) (except MI R	Δ 1)	Other (Explain in Remarks)	
☐ Hydrogen Sulfide (A4)	Loamy Gleyed			,		
Depleted Below Dark Surface (A11)	Depleted Matri					
☐ Thick Dark Surface (A12)	Redox Dark S	. ,				
Sandy Mucky Minerals (S1)	Depleted Dark	· · ·			³ Indicators of hydrophytic vege	etation and
Sandy Gleyed Matrix (S4)	Redox Depres				Wetland hydrology must b	
Restrictive Layer (if present):						
Туре:				Hy	dric Soil Present?	
Dopth (inches):						Yes⊡ No⊠
Depth (inches):	not within the soil and		a abrama of	****	la waa taa high	
Remarks: No hydric soil indicators were r	het within the soli pro	me because in	le chroma or	ine samp	ne was too nign.	
HYDROLOGY						
Wetland Hydrology Indicators:					Secondary Indicators	
					(2 or more required)	
Primary Indicators (min. of one required;	check all that apply)					
Surface Water (A1)	U Water-Stained		ovcont MI P	A 1 2 A	Water Stained Lea 🗌 🖓 🗍 Water Stained Lea	
High Water Table (A2)	Salt Crust (B1			A 1, 2, 4/	Drainage Patterns	
\Box Saturation (A3)	Aquatic Inverte	,			Dry-Season Water	
☐ Water Marks (B1)	Hydrogen Sulf	. ,			Saturation Visible of	()
Sediment Deposits (B2)	Oxidized Rhizo		a Livina Root	s (C3)	Geomorphic Positio	
Drift Deposits (B3)	Presence of R	-		- ()	Shallow Aquitard (I	
Algal Mat or crust (B4)	Recent Iron Re				FAC-Neutral Test (
☐ Iron Deposits (B5)	Stunted or Stre				Raised Ant Mound	-
Surface Soil Cracks (B6)	Other (Explain		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Frost-Heave Humn	. , . ,
☐ Inundation Visible on Aerial Imagery (,			—	
	•			1		
Field Observations:	N 57 -					
Surface Water Present? Yes Water Table Present? Yes		oth (Inches):		10/~4	land Undralagy Dragont2	
Water Table Present? Yes Saturation Present? Yes		oth (Inches): oth (Inches):		wei	land Hydrology Present?	Yes 🗌 No 🖂
(Includes Capillary fringe)						
Describe Recorded Data (Stream gauge,	monitoring well, aeria	al photos, prev	ious inspectio	ons), if av	/ailable:	
	U		•	,.		
Remarks:No indicators of wetland hydrole	ogy were observed at	or near the te	st plot.			

Appendix B

Wetland Rating Forms for Western Washington (2014 Rating System)

Wetland Rating Figure 1 Wetland Rating Figure 2 Wetland Rating Figure 3 Wetland Rating Figure 4 Wetland Rating Figure 5 150' Offset – South 1 KM Offset – South 150' Offset – North 1 KM Offset – North 303(d) Listed Waters and TMDLs for WRIA

RATING SUMMARY – Western Washington

Name of wetland (or ID #):Wetland JDate of site visit:2/29/2016 & 3/01/2016Rated by J. Madriz, L. Hoffmann, and M. McGrathTrained by Ecology? YesDate of training 09/2015HGM Class used for ratingSlopeWetland has multiple HGM classes? Y x N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>Google Earth (2015)</u>

OVERALL WETLAND CATEGORY III (based on functions <u>x</u> or special characteristics_)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

X Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat						
Circle the appropriate ratings									
Site Potential	L	L	L						
Landscape Potential	М	М	Н						
Value	Н	М	М	TOTAL					
Score Based on Ratings	6	5	6	17					

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

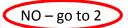
Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	1
(can be added to figure above)		1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	2
polygons for accessible habitat and undisturbed habitat		2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	5a
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	5b

HGM Classification of Wetlands in Western Washington

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

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

Are the water levels in the entire unit usually controlled by tides except during floods?



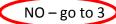
YES – the wetland class is Tidal Fringe – go to 1.1

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

NO – Saltwater Tidal Fringe (Estuarine)

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

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



YES – The wetland class is Flats

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

3. Does the entire wetland unit meet all of the following criteria? ____The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size; At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

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

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - <u>x</u> The wetland is on a slope (*slope can be very gradual*),
 - <u>x</u> 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**.

NO – go to 5

YES – The wetland class is Slope

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

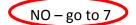
- 5. Does the entire wetland unit **meet all** of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river.
 - The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>J</u>

YES – The wetland class is Riverine NOTE:

The Riverine unit can contain depressions that are filled with water when the river is not flooding

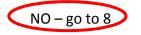
6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*



NO - go to 6

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 classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	ESTUARINE

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

<u>SLOPE WETLANDS</u> Water Quality Functions - Indicators that the site functions to improve water qu	ality
S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop in elevation for ever 100 ft of horizontal distance)	У
Slope is 1% or less points	= 3 2
Slope is > 1%-2% points	= 2
Slope is > 2%-5% points	= 1
Slope is greater than 5% points	= 0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions): Yes = 3 No	= 0 0
have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are highthan 6 in.Dense, uncut, herbaceous plants > 90% of the wetland areaDense, uncut, herbaceous plants > ½ of areaDense, woody, plants > ½ of areaDense, uncut, herbaceous plants > ¼ of areaDoes not meet any of the criteria above for plants	= 6 3 = 3 = 2 = 1
Total for S 1 Add the points in the boxes ab	ove 5
Rating of Site Potential If score is: 12 = H 6-11 = M x 0-5 = L Record the rate	ting on the first po
Total for S 1 Add the points in the boxes ab Rating of Site Potential If score is: 12 = H 6-11 = M x 0-5 = L Record the rate S 2.0. Does the landscape have the potential to support the water quality function of the site? S	ove 5
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No	= 0 1

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		0
Other sources Yes	= 1 No = 0	0
Total for S 2Add the points in the b	oxes above	1
Rating of Landscape Potential If score is: x 1-2 = M 0 = L Record	d the rating on	the first nane

Rating of Landscape Potential If score is: <u>x</u> 1-2 = M ____0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the basin in which unit is found. Yes = 2 No = 0	2
Total for S 3Add the points in the boxes above	4
Rating of ValueIf score is: x2-4 = H1 = M0 = LRecord the rating on the second the	the first page

Wetland name or number <u>J</u>

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erc	sion
S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually $> \frac{1}{8}$	
in), or dense enough, to remain erect during surface flows.	0
Dense, uncut, rigid plants cover > 90% of the area of the wetland points = 1	
All other conditions points = 0	
Rating of Site Potential If score is: 1 = M x 0 = L Record the rating on	the first page

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0 1

Rating of Landscape Potential If score is: x 1 = M ___0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or	
natural resources (e.g., houses or salmon redds)points = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1No flooding problems anywhere downstreampoints = 0	1
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6Add the points in the boxes above	1

Rating of Value If score is: 2-4 = H x 1 = M 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

	itors that site functions to pro		
H 1.0. Does the site have the pot	ential to provide habitat?		
Cowardin plant classes in the of ¼ ac or more than 10% of the Aquatic bed Aquatic bed Emergent Forested (areas where tr Forested (areas where tr If the unit has a Forested	wetland. Up to 10 patches may be o he unit if it is smaller than 2.5 ac. Ac e shrubs have > 30% cover) ees have > 30% cover) d class, check if:	d strata within the Forested class. Check the combined for each class to meet the threshold dd the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0 c, shrubs, herbaceous, moss/ground-cover)	1
that each cover 20% wit	hin the Forested polygon		
more than 10% of the wetland Permanently flooded or in Seasonally flooded or inu <u>x</u> Occasionally flooded or in <u>x</u> Saturated only Permanently flowing stree	d or ¼ ac to count (<i>see text for desci</i> nundated nundated nundated nundated nam or river in, or adjacent to, the w n in, or adjacent to, the wetland	4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	1
Different patches of the same	urasian milfoil, reed canarygrass,	east 10 ft ² . <i>The size threshold and you do not have to name</i> <i>purple loosestrife, Canadian thistle</i> <i>points = 2</i> <i>points = 1</i> <i>points = 0</i>	1
H 1.4. Interspersion of habitats Decide from the diagrams be the classes and unvegetated a		Cowardin plants classes (described in H 1.1), or udflats) is high, moderate, low, or none. <i>If you</i>	1

 Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 3 slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet we where wood is exposed) 	0 degree eathered	0
 At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that an permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 f strata) 		
Total for H 1 Add the points in the b	oxes above	4
Rating of Site Potential If score is:15-18 = H7-14 = Mx0-6 = L Record	rd the rating on th	ne first po
H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> If total accessible habitat is: $> {}^{1}/_{3}$ (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon	= <u>0</u> % points = 3 points = 2 points = 1	0
< 10% of 1 km Polygon	points = 0	
	points = 0	3

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria:

- It has 3 or more priority habitats within 100 m (see next page)
- It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- It is mapped as a location for an individual WDFW priority species
- It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- It has been categorized as an important habitat site in a local or regional comprehensive plan, in a
 - Shoreline Master Plan, or in a watershed plan
- X Site has 1 or 2 priority habitats (listed on next page) within 100 m

Site does not meet any of the criteria above

Rating of Value If score is: 2 = H x 1 = M 0 = L

points = 2

points =

points = 0

Record the rating on the first page

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 (No= N)t an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
 SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-graze	Cat. I
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV	Cat. I
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <u>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</u> Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	
 SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – o to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No = s not a bog 	
 SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog 	Cat. I

SC 4.0. Forested Wetlands			
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA			
Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i>			
the wetland based on its functions.			
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered			
canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of			
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.			
— Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the			
species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).			
Yes = Category I No = No = Not a forested wetland for this section	Cat. I		
SC 5.0. Wetlands in Coastal Lagoons			
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?			
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from			
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks			
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	• • •		
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	Cat. I		
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon $C = 1$ No = Not a wetland in a coastal lagoon			
SC 5.1. Does the wetland meet all of the following three conditions?			
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II		
- At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-			
mowed grassland.			
The wetland is larger than $1/_{10}$ ac (4350 ft ²)			
Yes = Category I No = Category I			
SC 6.0. Interdunal Wetlands			
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If			
you answer yes you will still need to rate the wetland based on its habitat functions.			
In practical terms that means the following geographic areas:			
 Long Beach Peninsula: Lands west of SR 103 			
— Grayland-Westport: Lands west of SR 105	Cat I		
 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 			
Yes – Go to SC 6.1 No = ot an interdunal wetland for rating			
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M	Cat. II		
for the three aspects of function)? Yes = Category I No – Go to SC 6.2	cat. II		
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?			
Yes = Category II No – Go to SC 6.3	Cat. III		
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?			
Yes = Category III No = Category IV			
	Cat. IV		
Category of wetland based on Special Characteristics			
If you answered No for all types, enter "Not Applicable" on Summary Form	N/A		

Wetland name or number <u>J</u>

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RATING SUMMARY – Western Washington

Name of wetland (or ID #):Wetland LDate of site visit:2/29/2016 & 3/01/2016Rated by J. Madriz, L. Hoffmann, and M. McGrathTrained by Ecology? YesDate of training 09/2015HGM Class used for ratingSlopeWetland has multiple HGM classes? Y x N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>Google Earth (2015)</u>

OVERALL WETLAND CATEGORY III (based on functions <u>x</u> or special characteristics_)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

X Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Circle the appropriate ratings				
Site Potential	L	L	L	
Landscape Potential	М	М	М	
Value	Н	М	М	TOTAL
Score Based on Ratings	6	5	5	16

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	I II	
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	1 11	
Interdunal	I II III IV	
None of the above	N/A	

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

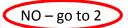
Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	1
(can be added to figure above)		1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	2
polygons for accessible habitat and undisturbed habitat		2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	5a
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	5b

HGM Classification of Wetlands in Western Washington

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

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

Are the water levels in the entire unit usually controlled by tides except during floods?



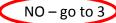
YES – the wetland class is Tidal Fringe – go to 1.1

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

NO – Saltwater Tidal Fringe (Estuarine)

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

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



YES – The wetland class is Flats

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

3. Does the entire wetland unit meet all of the following criteria? ____The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size; At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

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

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - <u>x</u> The wetland is on a slope (*slope can be very gradual*),
 - <u>x</u> 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**.

NO – go to 5

YES – The wetland class is Slope

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

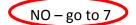
- 5. Does the entire wetland unit **meet all** of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river.
 - The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>L</u>

YES – The wetland class is Riverine NOTE:

The Riverine unit can contain depressions that are filled with water when the river is not flooding

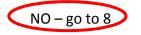
6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*



NO - go to 6

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 classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	ESTUARINE

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

SLOPE WETLANDS		
Water Quality Functions - Indicators that the site functions to imp	prove water quality	
S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop in 100 ft of horizontal distance)	elevation for every	
Slope is 1% or less	points = 3	2
Slope is > 1%-2%	points = 2	2
Slope is > 2%-5%	points = 1	
Slope is greater than 5%	points = 0	
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definition of the surface of the	<i>ions)</i> : Yes = 3 No = 0	0
 S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area 	-	3
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	
Total for S 1 Add the poin	ts in the boxes above	5
Rating of Site Potential If score is: 12 = H 6-11 = M x 0-5 = L	Record the rating on t	he first page
S 2.0. Does the landscape have the potential to support the water quality function of the	ne site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generative structures are a structure of the str	ate pollutants? Yes = 1 No = 0	1

	100 = 0	
S 2.2. Are there other sources of pollutants coming into the wetland that a	re not listed in question S 2.1?	0
Other sources	Yes = 1 No = 0	0
Total for S 2	Add the points in the boxes above	1
Rating of Landscape Potential If score is: x 1-2 = M0 = L	Record the rating on	the first page

Rating of Landscape Potential	If score is:	Х	1-2 = M	0 =
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S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the basin in which unit is found. Yes = 2 No = 0	2
Total for S 3Add the points in the boxes above	4
Rating of Value If score is: x 2-4 = H 1 = M 0 = L Record the rating on the second the se	the first page

Wetland name or number <u>L</u>

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream ero	sion
S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > 1/ 8	
in), or dense enough, to remain erect during surface flows.	0
Dense, uncut, rigid plants cover > 90% of the area of the wetland points = 1	
All other conditions points = 0	
Rating of Site Potential If score is: 1 = M x 0 = L Record the rating on	the first page

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0

Rating of Landscape Potential If score is: x 1 = M 0 = L

Record the rating on the first page

1

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems:	
The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)points = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1No flooding problems anywhere downstreampoints = 0	1
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6Add the points in the boxes above	1

Rating of Value If score is: 2-4 = H x 1 = M 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

ABITAT FUNCTIONS - Indicators that site function	
H 1.0. Does the site have the potential to provide habita	?
 1.1. Structure of plant community: Indicators are Cowardin of Cowardin plant classes in the wetland. Up to 10 patches of ¼ ac or more than 10% of the unit if it is smaller thanAquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested along has bee 2 out of 5 strate (sanaput of the compared along has bee 2 out of 5 strate (sanaput of 5 strate). 	may be combined for each class to meet the threshold 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0 1
The Forested class has 3 out of 5 strata (canopy, su that each cover 20% within the Forested polygon	-canopy, sindus, nerbaceous, moss/ground-cover)
 1.2. Hydroperiods Check the types of water regimes (hydroperiods) preser more than 10% of the wetland or ¼ ac to count (see tex	for descriptions of hydroperiods). 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0 to, the wetland
 1 1.3. Richness of plant species Count the number of plant species in the wetland that of Different patches of the same species can be combined to the species. Do not include Eurasian milfoil, reed cander of you counted: > 19 species 5 - 19 species 	b meet the size threshold and you do not have to name trygrass, purple loosestrife, Canadian thistle points = 2 points = 1
< 5 species 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion the classes and unvegetated areas (can include open with have four or more plant classes or three classes and open with have four or more plant classes or the have four	ter or mudflats) is high, moderate, low, or none. If you

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

H 1.5. Special habitat features:		
Check the habitat features that are present in the wetland. The number of checks is the number of points.		
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).		
Standing snags (dbh > 4 in) within the wetland		
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)		
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	1	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated <i>(structures for egg-laying by amphibians)</i>		
<u>X</u> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1 Add the points in the boxes above	6	
	the first pac	
Rating of Site Potential If score is: 15-18 = H 7-14 = M x 0-6 = L Record the rating on		
Rating of Site Potential If score is: 15-18 = H 7-14 = M x 0-6 = L Record the rating on H 2.0. Does the landscape have the potential to support the habitat functions of the site? Image: Control of the site? Image: Control of the site?		
H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).		
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 %	0	
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> % If total accessible habitat is:		
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 = 0 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon		
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> % If total accessible habitat is: > ¹ / ₃ (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon		
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 = 0 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 <		
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 = 0 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 <		
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 = 0 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon around the wetland.	0	
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 = 0 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon 20-33% of 1 km Polygon points = 3 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon		
H 2.0. Does the landscape have the potential to support the habitat functions of the site?H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).Calculate:% undisturbed habitat0% If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygon10-19% of 1 km Polygon< 10% of 1 km Polygon	0	
H 2.0. Does the landscape have the potential to support the habitat functions of the site?H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).Calculate:% undisturbed habitat 0+ [(% moderate and low intensity land uses)/2]0% If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoints = 320-33% of 1 km Polygon< 10% of 1 km Polygon	0	
H 2.0. Does the landscape have the potential to support the habitat functions of the site?H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).Calculate:% undisturbed habitat 0+ [(% moderate and low intensity land uses)/2] 0=0%If total accessible habitat is:> $^1/_3$ (33.3%) of 1 km Polygonpoints = 320-33% of 1 km Polygonpoints = 210-19% of 1 km Polygonpoints = 1< 10% of 1 km Polygon	0	
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 = 0 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 1 > 10% of 1 km Polygon vints = 0 H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat 45 + [(% moderate and low intensity land uses)/2] 9.5 = 54.5% Undisturbed habitat 10-50% and in 1-3 patches points = 3 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon	0	
H 2.0. Does the landscape have the potential to support the habitat functions of the site? H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 0 = 0 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 1 > 10% of 1 km Polygon vints = 0 H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat 45 + [(% moderate and low intensity land uses)/2] 9.5 = 54.5% Undisturbed habitat 10-50% and in 1-3 patches points = 3 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon	0	

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated*.

Site meets ANY of the following criteria:

- ____ It has 3 or more priority habitats within 100 m (see next page)
- It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- It is mapped as a location for an individual WDFW priority species
- It is a Wetland of High Conservation Value as determined by the Department of Natural Resources

— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a

- Shoreline Master Plan, or in a watershed plan
- \underline{X} Site has 1 or 2 priority habitats (listed on next page) within 100 m

Site does not meet any of the criteria above

Rating of Value If score is: 2 = H x 1 = M 0 = L

points = 2

points = 1

8

points = 0

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
 SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-g	Cat. I
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV	Cat. I
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <u>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</u> Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	
 SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – to to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No = s not a bog 	
 SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog 	Cat. I

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA	
Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate	
the wetland based on its functions.	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
— Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the	
species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).	
Yes = Category I No = No = No a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	Cat. I
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft ²)	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
— Long Beach Peninsula: Lands west of SR 103	
 — Grayland-Westport: Lands west of SR 105 	Cat I
 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 	
Yes – Go to SC 6.1 No = ot an interdunal wetland for rating	
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M	Cat. II
for the three aspects of function)? Yes = Category I No – Go to SC 6.2	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
Yes = Category II No – Go to SC 6.3	Cat. III
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?	
Yes = Category III No = Category IV	
Yes = Category III No = Category IV	Cat. IV
Yes = Category III No = Category IV Category of wetland based on Special Characteristics	Cat. IV

Wetland name or number <u>L</u>

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RATING SUMMARY – Western Washington

Name of wetland (or ID #):Wetland MDate of site visit:2/29/2016 & 3/01/2016Rated by J. Madriz, L. Hoffmann, and M. McGrathTrained by Ecology?YesDate of training 09/2015HGM Class used for ratingSlopeWetland has multiple HGM classes?Yx

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>Google Earth (2015)</u>

OVERALL WETLAND CATEGORY III (based on functions <u>x</u> or special characteristics_)

1. Category of wetland based on FUNCTIONS

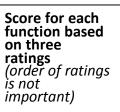
Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

X Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	oropriate ratings	
Site Potential	L	М	L	
Landscape Potential	L	L	Н	
Value	Н	М	М	TOTAL
Score Based on Ratings	5	5	6	16



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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

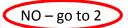
Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	3
Hydroperiods	H 1.2	3
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	3
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	2
(can be added to figure above)		3
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	4
polygons for accessible habitat and undisturbed habitat		4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	5a
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	5b

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?



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

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

NO – Saltwater Tidal Fringe (Estuarine)

YES – Freshwater Tidal Fringe

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

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

NO – go to 3

YES – The wetland class is Flats

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

Does the entire wetland unit meet all of the following criteria?
 __The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 __At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES - The wetland class is Lake Fringe (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - <u>x</u> The wetland is on a slope (*slope can be very gradual*),
 - <u>x</u> 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,
 - <u>x</u> The water leaves the wetland without being impounded.

NO – go to 5

YES – The wetland class is Slope

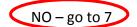
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 - ____The overbank flooding occurs at least once every 2 years.

Wetland name or number <u>M</u>

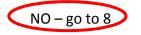
NO – go to 6 YES – The wetland class is **Riverine NOTE**: The Riverine unit can contain depressions that are filled with water when the river is not flooding

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



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 classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	ESTUARINE

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

SLOPE WETLANDS Water Quality Functions - Indicators that the site functions to improve water quality	
S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)	
Slope is 1% or less points = 3	2
Slope is > 1%-2% points = 2	2
Slope is > 2%-5% points = 1	
Slope is greater than 5% points = 0	
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions): Yes = 3 No = 0	0
Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.Dense, uncut, herbaceous plants > 90% of the wetland areapoints = 6 points = 1 	3
Total for S 1Add the points in the boxes above	5
Rating of Site Potential If score is: $12 = H$ $6-11 = M$ $x_0-5 = L$ Record the rating onS 2.0. Does the landscape have the potential to support the water quality function of the site?	the first page
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?		0
Other sources	Yes = 1 No = 0	0
Total for S 2	Add the points in the boxes above	0
Bating of Landscape Potential If score is: $1-2 = M \times 0 = I$	Record the rating on	the first nane

Rating of Landscape Potential	If score is:	1-2 = M	x 0=L
• ·			

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the basin in which unit is found. Yes = 2 No = 0	2
Total for S 3Add the points in the boxes above	4
Rating of Value If score is: x 2-4 = H 1 = M 0 = L Record the rating on the second the se	the first page

Wetland name or number <u>M</u>

SLOPE WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion S 4.0. Does the site have the potential to reduce flooding and stream erosion? S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > 1/ *in), or dense enough, to remain erect during surface flows.* 8 Dense, uncut, rigid plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0

Rating of Site Potential If score is: <u>x</u>1 = M <u>0</u> = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess	
surface runoff? Yes = 1 No = 0	0

Rating of Landscape Potential If score is: 1 = M x 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or	
natural resources (e.g., houses or salmon redds)points = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1No flooding problems anywhere downstreampoints = 0	1
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	
Total for S 6Add the points in the boxes above	1

Rating of Value If score is: 2-4 = H x 1 = M 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

HABITAT FUNCTIONS - Indicators that site funct	is to provide important habitat
H 1.0. Does the site have the potential to provide hat	
of ¼ ac or more than 10% of the unit if it is smaller th Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover Forested (areas where trees have > 30% cover If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy	may be combined for each class to meet the threshold 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2
that each cover 20% within the Forested polyg H 1.2. Hydroperiods	
Check the types of water regimes (hydroperiods) pre more than 10% of the wetland or ¼ ac to count (see Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the Seasonally flowing stream in, or adjacent to, the Lake Fringe wetland Freshwater tidal wetland	4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0 to, the wetland
H 1.3. Richness of plant species Count the number of plant species in the wetland th Different patches of the same species can be combin the species. Do not include Eurasian milfoil, reed c If you counted: > 19 species 5 - 19 species	to meet the size threshold and you do not have to name
< 5 species	points = 0
	among Cowardin plants classes (described in H 1.1), or ater or mudflats) is high, moderate, low, or none. <i>If you</i> <i>n water, the rating is always high.</i>

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points</i>	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	(1)
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degr slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weather where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list strata)	of
Fotal for H 1Add the points in the boxes all	bove 3
Rating of Site Potential If score is: 15-18 = H 7-14 = M x 0-6 = L Record the r	rating on the first p
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat <u>28</u> + [(% moderate and low intensity land uses)/2] <u>10.5</u> = <u>3</u>	38.5 %
	<u>38.5</u> %
Calculate: % undisturbed habitat <u>28</u> + [(% moderate and low intensity land uses)/2] <u>10.5</u> = <u>3</u> If total accessible habitat is:	38.5 % ts = 3 3
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygonpoint	
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygonpoint20-33% of 1 km Polygonpoint	ts = 3 3
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint	ts = 3 3 ts = 2
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	ts = 3 3 ts = 2 ts = 1
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	ts = 3 3 ts = 2 ts = 1 ts = 0
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	ts = 3 3 ts = 2 ts = 1 ts = 0 0.5 % ts = 3
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	ts = 3 3 ts = 2 ts = 1 ts = 0 0.5 %
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	ts = 3 ts = 2 ts = 1 ts = 0 0.5 % ts = 3 3
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $1/3$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	$ \begin{array}{c} ts = 3 \\ ts = 2 \\ ts = 1 \\ ts = 0 \end{array} $ $ \begin{array}{c} 0.5 \\ ts = 3 \\ ts = 2 \end{array} $ $ \begin{array}{c} 3 \\ 3 \\ 3 \\ 3 \\ \end{array} $
Calculate:% undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3If total accessible habitat is:> $1/3$ (33.3%) of 1 km Polygon20-33% of 1 km Polygonpoint20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	ts = 3 ts = 2 ts = 1 ts = 0 0.5 % ts = 3 ts = 2 ts = 1 3
If total accessible habitat is:> $^{1}/_{3}$ (33.3%) of 1 km Polygonpoint20-33% of 1 km Polygonpoint10-19% of 1 km Polygonpoint< 10% of 1 km Polygon	$ \begin{array}{c} ts = 3 \\ ts = 2 \\ ts = 1 \\ ts = 0 \end{array} $ $ \begin{array}{c} 0.5 \\ \% \\ ts = 3 \\ ts = 2 \\ ts = 1 \\ ts = 0 \end{array} $ $ \begin{array}{c} 3 \\ 3 \\ \end{array} $
Calculate: % undisturbed habitat 28 + [(% moderate and low intensity land uses)/2] 10.5 = 3 If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon 20-33% of 1 km Polygon point 10-19% of 1 km Polygon point <10% of 1 km Polygon	$ \begin{array}{c} ts = 3 \\ ts = 2 \\ ts = 1 \\ ts = 0 \end{array} $ $ \begin{array}{c} 0.5 \\ \% \\ ts = 3 \\ ts = 2 \\ ts = 1 \\ ts = 0 \end{array} $ $ \begin{array}{c} 3 \\ 3 \\ \end{array} $

H 3.0. Is the habitat provided by the site valuable to society?

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.*

Site meets ANY of the following criteria:

- It has 3 or more priority habitats within 100 m (see next page)
- It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)
- It is mapped as a location for an individual WDFW priority species
- --- It is a Wetland of High Conservation Value as determined by the Department of Natural Resources
- It has been categorized as an important habitat site in a local or regional comprehensive plan, in a
- Shoreline Master Plan, or in a watershed plan
- \underline{X} Site has 1 or 2 priority habitats (listed on next page) within 100 m

Site does not meet any of the criteria above

Rating of Value If score is: 2 = H x 1 = M 0 = L

points = 2

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to SC 1.1	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
 SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-graze	Cat. I
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV	Cat. I
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <u>http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</u>	
Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	
 SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on ten of a lake or pond? Yes – Go to SC 3.3 No = Is not a bog 	
 SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog 	Cat. I

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA	
Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i>	
the wetland based on its functions.	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
— Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the	
species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).	
Yes = Category I No =Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	0.4.1
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- manual grazeland	
mowed grassland. The wetland is larger than $\frac{1}{2}$ as (4250 ft ²)	
The wetland is larger than $1/_{10}$ ac (4350 ft ²) Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103	
 Grayland-Westport: Lands west of SR 105 	Cat I
 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 	
Yes – Go to SC 6.1 No = not an interdunal wetland for rating	
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M	Cat. II
for the three aspects of function)? Yes = Category I No – Go to SC 6.2	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
Yes = Category II No – Go to SC 6.3	Cat. III
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?	
Yes = Category III No = Category IV	Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	N/A

Wetland name or number <u>M</u>

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- Wetland Unit Boundary
- 150' Wetland Offset

Cowardin Vegetation Class Division

- Occasionally Flooded or Inundated
- Saturated Only
- Seasonally Flooded or Inundated
- Permanently Flowing Stream

EM	Emergent
SS	Scrub/shrub
FO	Forested

Wetland G (2004 Rating System)	2
--------------------------------	---

H 1.1/H 1.4 - Emergent and scrub-shrub. Moderate interspersion.	H 1.1
H 1.2 - Seasonally flooded, occasionally flooded, saturated only.	H 1.2
S 1.3 - Dense, ungrazed, herbaceous vegetation > 90% of wetland area.	perma wetla
S 3.1 - Dense, uncut, rigid vegetation > 1/2 area of wetland. S 2 Residential, urban areas, or golf courses are within 150 ft. upslope of the wetland.	S 1.3 wetla
Wetland J	S 4.1
H 1.1/H 1.4 - Emergent, scrub-shrub. Low interspersion.	S 2.1 of the
H 1.2 - Occasionally flooded, saturated only. S 1.3 - Dense, uncut, herbaceous plants > 1/2 of the wetland area.	S 5.1 wetla
S 4.1 - All other conditions.	surfa

S 2.1 - > 10% of the area within 150 ft. on the uphill side of the wetland in land uses that generate pollutan

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

<u>Wetland L</u> H 1.1/H 1.4 - Emergent, scrub-shrub. Low interspersion. H 1.2 - Occasionally flooded, saturated only, permanentlly flowing steam in or adjacent to the land.

0

.3 - Dense, uncut, herbaceous plants > 1/2 of the land area.

.1 - All other conditions.

2.1 - > 10% of the area within 150 ft. on the uphill side the wetland in land uses that generate pollutants. 5.1 - > 25% of the area within 150 ft. upslope of and in land uses or cover that generate excess surface runoff.



WETLAND L

(35%).

WETLAND J

Polygon (0%).

and in 1-3 patches (43%).

M

WETLAND J

WETLAND

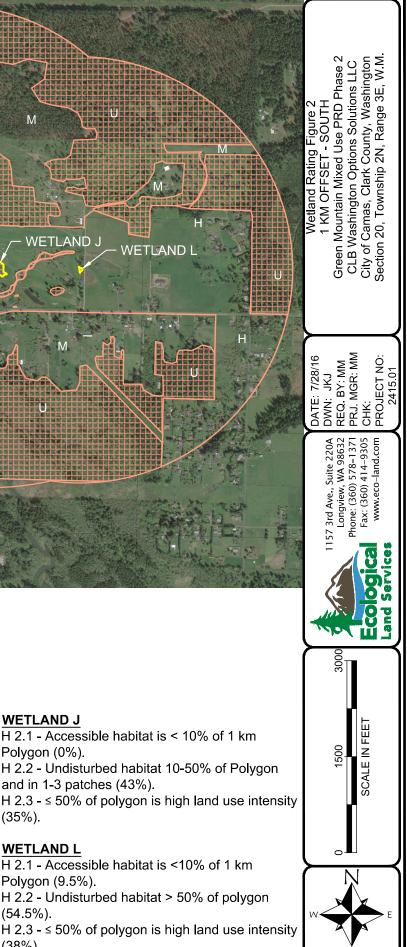
H 2.1 - Accessible habitat is <10% of 1 km Polygon (9.5%).

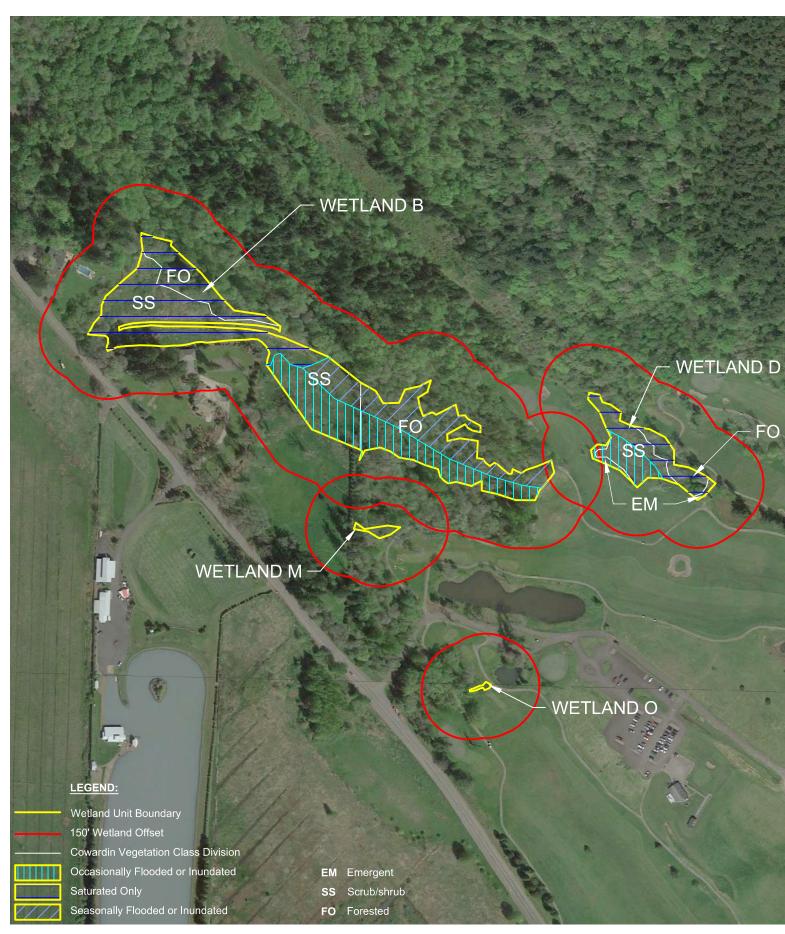
H 2.1 - Accessible habitat is < 10% of 1 km

H 2.2 - Undisturbed habitat 10-50% of Polygon

H 2.2 - Undisturbed habitat > 50% of polygon (54.5%).

H 2.3 - ≤ 50% of polygon is high land use intensity (38%).





Wetland B (2004 Rating System)

- H 1.1/H 1.4 Scrub-shrub, forested, forested has 3 out of 5 strata. Moderate interspersion.
- H 1.2 Seasonally flooded, occasionally flooded, saturated only.
- S 1.3 Dense, ungrazed, herbaceous vegetation > 90% of wetland area. S 3.1 - Dense, uncut, **rigid** vegetation > 1/2 area of wetland.
- S 2. Residential, urban areas, or golf courses are within 150 ft. upslope of the wetland.

Wetland D (2004 Rating System)

H 1.1/H 1.4 - Emergent and scrub-shrub. Moderate interspersion. H 1.2 - Seasonally flooded, occasionally flooded, saturated only. D 1.1/D 3.1 - Wetland has an intermittently flowing, OR highly constricted, permanently flowing outlet. D 2. - Residential, urban areas, or golf courses are within 150 ft. upslope of the wetland. D 3.2 - Marks are at least 0.5 ft. to <2 ft. from surface or bottom of outlet

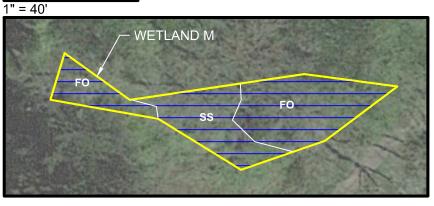
Wetland M

- H 1.1/H 1.4 Scrub-shrub, forested. Low interspersion.
- H 1.2 Saturated only.
- S 1.3 Dense, uncut, herbaceous plants > 1/2 of the wetland area.
- S 4.1 Dense, uncut, **rigid** plants cover > 90% of the area of the wetland.

Wetland O (2004 Rating System)

- H 1.1/H 1.4 Forested. No interspersion.
- H 1.2 Seasonally flooded and saturated only.
- S 1.3 Dense, ungrazed, herbaceous vegetation > 90% of wetland area.
- S 3.1 More than ³/₄ of area is grazed, mowed, tilled or vegetation is not rigid
- S 2. Residential, urban areas, or golf courses are within 150 ft. upslope of the wetland.

WETLAND M DETAIL

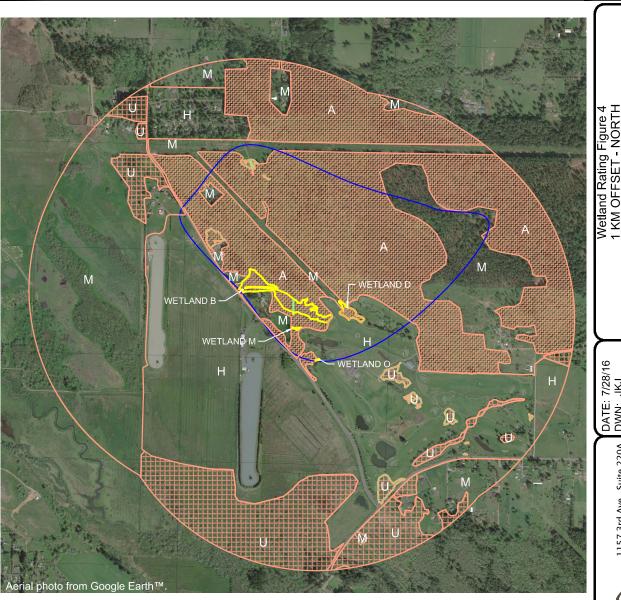


WETLAND O DETAIL 1" = 40'

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

S 2.1 - < 10% of the area within 150 ft. on the uphill side of the wetland in land uses that generate pollutants. S 5.1 - < 25% of the area within 150 ft. upslope of wetland in land uses or cover that generate excess surface runoff.





LEGEND:

Wetland Unit Boundary

- Accessible Habitat
- U Undisturbed Habitat
- High Intensity Land Use Н
- Μ Moderate/Low Intensity Land Use
 - **Contributing Basin**

WETLAND B

A

H 2.1 - Accessible habitat is 20-33% of 1 km Polygon (28%).

H 2.2 - Undisturbed habitat 10-50% of Polygon and in 1-3 patches (35%).

H 2.3 - ≤ 50% of polygon is high land use intensity (35%).

WETLAND D

D4.3 - Area of contributing basin is 10 to 100 times area of unit.

Ν

City of Camas, Clark County, Washington Section 20, Township 2N, Range 3E, W.M

Green Mountain Mixed Use PRD Phase CLB Washington Options Solutions LLC

> PRJ. MGR: MM **PROJECT NO:**

CHK:

Phone: (360) 578-1371 Fax: (360) 414-9305 www.eco-land.com 2415.01

ervice

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TT

SCALE IN FEE

3000

1500

REQ. BY: MM

DWN: JKJ

1157 3rd Ave., Suite 220A -ongview, WA 98632

D 5.3 - < 25% of the contributing basin is covered with intensive human land uses.

H 2.1 - Accessible habitat is > $\frac{1}{3}$ of 1 km Polygon (45.5%).

H 2.2 - Undisturbed habitat > 50% of Polygon.

H 2.3 - ≤ 50% of polygon is high land use intensity (38%).

WETLAND M

H 2.1 - Accessible habitat is > $\frac{1}{3}$ of 1 km Polygon (38.5%).

H 2.2 - Undisturbed habitat > 50% of Polygon.

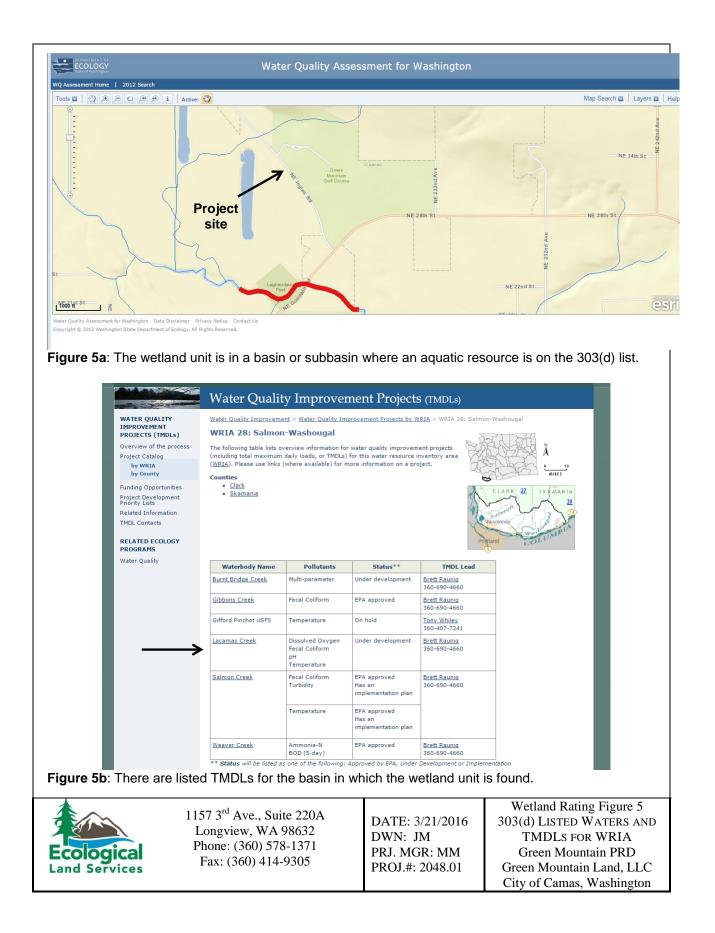
H 2.3 - \leq 50% of polygon is high land use intensity (38%).

WETLAND O

H 2.1 - Accessible habitat is < 10% of 1 km Polygon (9%).

H 2.2 - Undisturbed habitat is 10-50% and in > 3 patches.

H 2.3 - ≤ 50% of polygon is high land use intensity (48%).



Appendix C

Wetland Rating Forms for Western Washington (2004 Rating System)

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among usersName of wetland (if known): Wetland BDate of site visit: Oct. 2013

Rated by <u>A. Aberle</u> Trained by Ecology? Yes<u>X</u> No_____ Date of Training: <u>Oct. 2006</u>

SECTION: <u>20</u> TOWNSHIP: <u>2N</u>RANGE: <u>3E</u> Is S/T/R in Appendix D? Yes <u>X</u>No____

Map of wetland unit: Figure ____ Estimated size 4.48 acres

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ____ II ____ III _X _ IV _

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

Score for Water Quality Functions	14
Score for Hydrologic Functions	5
Score for Habitat Functions	21
TOTAL Score for functions	40

Category based on SPECIAL CHARACTERISTICS of wetland

I ____ II ____ Does not Apply $\underline{\mathbf{X}}$

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



Check the appropriate type and class of wetland being rated.

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

1

Comments

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

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

Check List for Wetlands That Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed</i> <i>Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). 		Х
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		X
SP4. <i>Does the wetland 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.

Comments Formal priority and habitat species request has been completed.

2

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 wetland usually controlled by tides (i.e. except during floods)?

 \square NO – go to 2 \square YES – the wetland class is Tidal Fringe

If yes, is the sa	linity of the water	during periods of	annual low flow be	low 0.5 ppt (pa	rts per
thousand)?] YES – Freshwat	ter 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.

 \square NO – go to 3 \square 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 wetland **meet both** of the following criteria?
 - The vegetated part of the wetland is on the shores of a body of 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)?
 - \square NO go to 4 \square YES

4 **[YES** – The wetland class is **Lake-fringe** (Lacustrine Fringe)

- 4. Does the wetland **meet all** of the following criteria?
 - The wetland is on a slope (*slope can be very gradual*), (
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

The water leaves the wetland **without being impounded**? NOTE: Surface water does not pond in these 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).

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

Comments

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 flooding. \square NO - go to 6 \square **YES** – The wetland class is **Riverine**

- 6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*NO go to 7 **YES** The wetland class is **Depressional**
- 7. Is the wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

 \square NO – go to 8 \square **YES** – The wetland class is **Depressional**

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

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater	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 you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Comments

4

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland unit functions to improve water quality	(only 1 score per box)
S	S 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p. 64)
S	S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) points = 3 Slope is 1% - 2% 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 organic(<i>use NRCS definitions</i>) YES = 3 points NO = 0 points	0
S	 S 1.3 Characteristics of the vegetation in the wetland that traps 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, ungrazed, herbaceous vegetation > 90% of wetland area points = 6 Dense, ungrazed, herbaceous vegetation > ½ of area points = 3 Dense, woody vegetation > ½ of area points = 1 Dense, ungrazed, herbaceous vegetation > ¼ of area points = 1 Does not meet any of the criteria above for vegetation Aerial photo or map with vegetation polygons 	Figure
S	Total for S 1Add the points in the boxes above	7
S	 S 2. Does the wetland 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? <i>Note which of the following conditions provide the sources of pollutants A unit may have pollutants coming form several sources, but any single source would qualify as opportunity</i> □ Grazing in the wetland or within 150 ft □ Untreated stormwater discharges to wetland □ Tilled fields or orchards within 150 feet of wetland □ Other ○ YES multiplier is 2 □ NO multiplier is 1 	(see p. 67) multiplier
S	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from S1 by S2	<u>2</u>
3	Add score to table on p. 1	14

Comments

S	Slope Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream erosion	(only 1 score per box)
S	S 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 68)
S	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> 1/8 in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers >90% of area of the wetland. points = 6 Dense, uncut, rigid vegetation >1/2 area of wetland 	3
0	The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	2
S	Add the points in the boxes above	5
S	 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>. Wetland has surface runoff that drains to a river or stream that has flooding 	(see p. 70)
	problems Definition 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.)	multiplier
6	YES multiplier is 2 NO multiplier is 1	<u>1</u>
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	5

Comments

6

These questions apply to wetlands of			Points (only 1 score per box)
HABITAT FUNCTIONS – Indicators t			
H 1. Does the wetland 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 acre or more than 10% of the area if unit i □ Aquatic bed □ Emergent plants □ Scrub/shrub (areas where shrubs have > 30% If the unit has a forested class check if: 	s smaller than 2.5 acres. >30% cover))- Size threshold for each class is ¼	Figure_
Forested areas have 3 out of 5 strata (ca		, herbaceous, moss/ground-cover)	
that each cover 20% within the foreste			
Add the number of vegetation types that qua	4 types or more	points = 4	
	3 types	points = 4 points = 2	
Map of Cowardin vegetation classes	2 types	points = 2 points = 1	
	1 type	points = 1 points = 0	
H 1.2 Hydroperiods (see p. 73)	rtype	points = 0	Figure_
 Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in Seasonally flowing stream or river in, a Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points 	2 types , or adjacent to, the wetlan	s present $points = 2$ s present $points = 1$ nd	2
H 1.3 <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the we species can be combined to meet the size the 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:	reshold.) arygrass, purple loosestrif		2

Total for page <u>6</u>

H 1.4 Interspersion of habitats (see p. 76) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. None = 0 points Low = 1 point Moderate = 2 points None = 0 points Low = 1 point For the point point (riparian braided channels] Itigh - 3 points NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes	Figure1
 H 1.5 Special Habitat Features: (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. □ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). □ Standing snags (diameter at bottom >4 inches) in the wetland □ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>) □ At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) ∞ Invasive plants cover less than 25% of the wetland area in each stratum of plants <i>Note: The 20% stated in early printings of the manual on page 78 is an error</i> H 1. TOTAL Score – potential for providing habitat	3
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5 Comments:	10

H 2.1 Buffers (see p. 80) Figure Choose the description that best represents condition of buffer of wetland. 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) Points = 5 □ 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. Points = 4 □ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. 3 25% circumference. Points = 4 3 □ 00 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water 3 >55% circumference. Points = 3 □ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water 3 >55% circumference. Points = 3 □ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water 3 >25% circumference. Points = 3 □ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water 3
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□ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water 3 >25% circumference. Points = 3 ⊠ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water 3
>25% circumference. Points = 3 $\leq 50 \text{ m} (170 \text{ft}) \text{ of relatively undisturbed vegetated areas, rocky areas, or open water}$
for $> 50\%$ circumference. Points = 3
If buffer does not meet any of the three 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
Light to moderate grazing or lawns are OKPoints = 2Heavy 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. $Points = 1$
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? (<i>dams in riparian corridors, heavily used gravel roads,</i>
paved roads, are considered breaks in the corridor). $\Box YES = 4 \text{ points } (go \text{ to } H 2.3) \qquad \qquad \Box NO = go \text{ to } H 2.2.2$
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? 2
OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question
above?
$\boxtimes YES = 2 \text{ points } (go \text{ to } H 2.3) \qquad \qquad \squareNO = H 2.2.3$
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? \Box YES = 1 point \Box NO = 0 points

Total for page_5_

11.2.2		
	Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	ich of the following priority habitats are within 330ft (100m) of the wetland? (NOTE: the	
	nections do not have to be relatively undisturbed.	
	ese are DFW definitions. Check with your local DFW biologist if there are any questions	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both	
	aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth 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%; 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.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses	
	and/or forbs form the natural climax plant community.	
	Talus: 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.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
\boxtimes	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage	
	of the oak component of the stand is 25%.	3
\boxtimes	Urban Natural Open Space: A priority species resides within or is adjacent to the open space and	
	uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting	
	other priority habitats, especially those that would otherwise be isolated; and/or the open space is an	
	isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.	
	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by	
	land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is	
	at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically	
	increased above that of the open ocean by evaporation. Along some low-energy coastlines there is	
	appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-	
	derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both	
	estuaries and lagoons.	
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and	
	may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs,	
	snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and	
	that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion	
	control).	
	If wetland has 3 or more priority habitats = 4 points	
	If we than $has 2$ 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.	
	Note: All vegetated weithings are by definition a priority habital but are not included in this list. Nearby wetlands are addressed in question H 2.4)	

 1 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 points = 3 	3
There is at least 1 wetland within $\frac{1}{2}$ mile.points = 2There are no wetlands within $\frac{1}{2}$ mile.points = 0	
H 2 . TOTAL Score -opportunity for providing habitat <i>Add the scores in the column above</i>	
TOTAL for H 1 from page 14	10
Fotal Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	21

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
Check off any criteria that apply to the wetland. Select the appropriate Category (from	
dropdown menu in Category column) when the appropriate criteria are met.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt.	
$\Box YES = Go \text{ to } SC 1.1 \boxtimes NO$	
SC 1 1 Is the method within a National Wildlife Define. National Dark	Cat. I
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park,	
National Estuary Reserve, Natural Area Preserve, State Park or Educational,	
Environmental, or Scientific Reserve designated under WAC 332-30-151? \square YES = Category I \square NO go to SC 1.2	
SC 1.2 Is the wetland 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,	Cat. I Cat. II
cultivation, grazing, and has less than 10% cover of non-native plant species. If	Cat. II
the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of	Dual
the wetland, then the wetland should be given a dual rating (I/II). The area of	rating
Spartina would be rated a Category II while the relatively undisturbed upper	Tatting
marsh with native species would be a Category I. Do not, however, exclude the	I/II
area of Spartina in determining the size threshold of 1 acre.	1/11
At least ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of shrub,	
forest, or un-grazed or un-mowed grassland.	
The wetland has at least 2 of the following features: tidal channels, depressions	
with open water, or contiguous freshwater wetlands.	

SC 2.0 Natural Heritage Wetlands (see p. 87)	Cat. I				
Natural Heritage wetlands have been identified by the Washington Natural Heritage					
Program/DNR as either high quality undisturbed wetlands or wetlands that support state					
Threatened, Endangered, or Sensitive plant species.					
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural					
Heritage wetland? (this question is used to screen out most sites before you need to					
contact WNHP/DNR)					
S/T/R information from Appendix D \boxtimes or accessed from WNHP/DNR web site \square					
5/1/K information from Appendix D					
YES \square – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO \square					
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?					
$\Box YES = Category I \qquad \qquad \Box NO_not in a Heritage Wetland$					
$SC(2,0)$ $\mathbf{P}_{\rm rest}$ (see a 97)					
SC 3.0 Bogs (see p. 87)					
Does the wetland (or part of the wetland) 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.					
1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or					
mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See					
Appendix B for a field key to identify organic soils)					
Yes \Box - go to Q. 3 No \boxtimes go to Q. 2					
2. Does the wetland have organic soils, either peats or mucks that are less than 16					
inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash,					
or that are floating on a lake or pond?					
Yes \square - go to Q. 3 No \boxtimes - Is not a bog for purpose of rating					
3. Does the wetland 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 \square - Is a bog for purpose of rating No \boxtimes -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.					
1. Is the wetland forested ($>30\%$ cover) with sitka spruce, subalpine fir, western red					
cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or					
western white pine, WITH any of the species (or combination of species) on the bog					
species plant list in Table 3 as a significant component of the ground cover (> 30%					
coverage of the total shrub/herbaceous cover)? 2 $NES \square$ Cotagory I					
2. YES \square = Category I NO \boxtimes Is not a bog for purpose of rating					
	Cat. I				

SC 4.0 Forested Wetlands (see p. 90)						
Does the wetland have at least 1 acre of forest that meets one of these criteria for the						
Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you</i>						
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.						
$\Box YES = Category I \qquad \qquad \boxtimes NO \text{ not a forested wetland with special characteristics}$	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?						
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)						
\square YES = Go to SC 5.1 NO \square not a wetland in a coastal lagoon						
SC 5.1 Does the wetland meet all of the following three conditions?						
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation,						
grazing), and has less than 20% cover of invasive plant species (see list of invasive						
species on p. 74).						
At least ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or						
un-grazed or un-mowed grassland.						
The wetland is larger than $1/10$ acre (4350 square feet)						
$YES \square = Category I \qquad NO \square = Category II$						

SC 6.0 Interdunal Wetlands (see p. 93)				
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership				
or WBUO)?				
\square YES = Go to SC 6.1 \square NO 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:				
 Long Beach Peninsula – lands west of SR103 				
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 one acre				
or larger?				
$\Box YES = Category II \qquad \Box NO \text{ go to } SC 6.2$				
SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is	Cat.II			
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.				
Comments				

The wetland has been previously disturbed, therefore, it is not high quality undisturbed wetland. Based on ELS observations on-site, the wetland does not contain state threatened or endangered species.

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among usersName of wetland (if known): Wetland DDate of site visit: Oct. 2013

Rated by A. Aberle _____ Trained by Ecology? Yes X No_____ Date of Training: Oct. 2006

SECTION: <u>20</u> TOWNSHIP: <u>2N</u>RANGE: <u>3E</u> Is S/T/R in Appendix D? Yes <u>X</u>No____

Map of wetland unit: Figure 2 Estimated size 0.99 acres

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ____ II ____ III _X _ IV _

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

·	
Score for Water Quality Functions	14
Score for Hydrologic Functions	8
Score for Habitat Functions	18
TOTAL Score for functions	40

Category based on SPECIAL CHARACTERISTICS of wetland

I ____ II ____ Does not Apply $\underline{\mathbf{X}}$

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



Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
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	

1

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

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

Check List for Wetlands That Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed</i> <i>Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). 		Х
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		X
SP4. <i>Does the wetland 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.

Comments Formal priority and habitat species request has been completed.

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 wetland usually controlled by tides (i.e. except during floods)?

 \square NO – go to 2 \square YES – the wetland class is Tidal Fringe

If yes, is the sa	linity of the water	during periods of	annual low flow be	low 0.5 ppt (pa	arts per
thousand)?] YES – Freshwat	er 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.

 \square NO – go to 3 \square 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 wetland **meet both** of the following criteria?
 - The vegetated part of the wetland is on the shores of a body of 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 wetland **meet all** of the following criteria?
 - The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

The water leaves the wetland **without being impounded**? NOTE: Surface water does not pond in these 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).

 \square NO - go to 5 \square 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 flooding. \boxtimes NO - go to 6 \square **YES** – The wetland class is **Riverine**

- 6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*NO go to 7 YES The wetland class is Depressional
- 7. Is the wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

 \square NO – go to 8 \square **YES** – The wetland class is **Depressional**

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

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater	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 you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

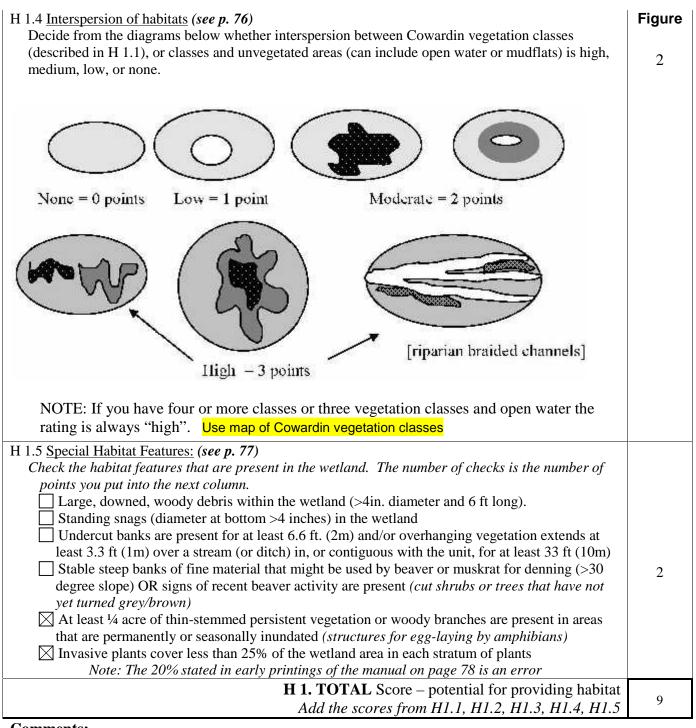
D	Depressional and Flats Wetlands WATER QUALITY FUNCTION – Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
D	D 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
D	D 1.1 Characteristics of surface water flows out of the wetland: points = 3 Unit is a depression with no surface water leaving it (no outlet) points = 3 Wetland has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 3 Wetland 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 obw natural outlet and/or outlet is a man-made ditch (if ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	ious 2
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES NO	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest class 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 8 <u>8</u> 3
D	D1.4 Characteristics of seasonal ponding or inundation.This is the area of the wetland that is ponded for at least 2 months, but dries out sometduring the year. Do not count the area that is permanently ponded. Estimate area as taverage condition 5 out of 10 yrs.Area seasonally ponded is > ½ total area of wetlandpoints = 4Area seasonally ponded is > ½ total area of wetlandArea seasonally ponded is > ¼ total area of wetlandpoints = 2Map of Hydroperiods	ime 9B he 2
D	Total for D 1Add the points in the boxes above	
D	D 2. Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface wate coming into the wetland that would otherwise reduce water quality in streams, lakes on groundwater downgradient from the wetland? <i>Note which of the following conditions</i> <i>provide the sources of pollutants. A unit may have pollutants coming from several</i> <i>sources, but any single source would qualify as opportunity.</i> ☐ Grazing in the wetland or within 150 ft ☐ Untreated stormwater discharges to wetland ☐ Tilled fields or orchards within 150 ft of wetland ☐ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed field roads, or clear-cut logging ⊠ Residential, urban areas, golf courses are within 150 ft of wetland ☐ Wetland is fed by groundwater high in phosphorus or nitrogen ☐ Other YES multiplier is 2 NO multiplier is 1	
D	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from D1 by D2	
	Add score to table on p.	1 14

D	Depressional and Flats Wetlands	Points
_	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce	
	flooding and stream degradation	
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D	D 3.1 Characteristics of surface water flows out of the wetland unit	Figure
υ	Unit is a depression with no surface water leaving it (no outlet) points = 4	
	Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	2
	Unit is flat depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points $= 0$	
D	D 3.2 Depth of storage during wet periods	Figure_
	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).	3
	Marks of ponding are 3 ft or more above the surface or bottom of outletpoints = 7The 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 of pointing between 2 it to < 3 it from surface of bottom of outlet points = 3 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3	
	Wetland 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 ftpoints = 0	
D	D 3.3 Contribution of wetland to storage in the watershed	Figure
	Estimate the ratio of the area of upstream basin contributing surface water to the	-
	wetland to the area of the wetland unit itself.	3
	The area of the basin is less than 10 times the area of unit $points = 5$	
	The area of the basin is 10 to 100 times the area of the unit $points = 3$	
	The area of the basin is more than 100 times the area of the unitpoints = 0Entire unit is in the FLATS classpoints = 5	
		8
D	Total for D 3Add the points in the boxes above	0
D	D 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p.49)
	Answer YES if the wetland 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.	
	Note which of the following indicators of opportunity apply.	
	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	multiplier
	Wetland has no outlet and impounds surface runoff water that might otherwise flow	munipher
	into a river or stream that has flooding problems	
	$\Box \text{ Other } ___$ $\Box \text{ YES multiplier is } 2 \square \text{ NO multiplier is } 1$	<u>1</u>
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	
	Add score to table on p. 1	8

Comments Go to Page 13

These questions apply to wetlands	of all HGM classes			Points
HABITAT FUNCTIONS – Indicators that	t wetland functions to pro	vide importa	nt habitat	(only 1 score per box)
H 1. Does the wetland have the potentia H 1.1 Vegetation structure (see p. 72)	<u>al</u> to provide habitat for p	many specie	s?	Figure
Check the types of vegetation classes preset is ¼ acre or more than 10% of the area ig Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have Forested (areas where trees have >309 If the unit has a forested class check if:	f unit is smaller than 2.5 acro >30% cover) % cover)	es.		2
Forested areas have 3 out of 5 strata (cover) that each cover 20% within the		nerbaceous, i	noss/ground-	
Add the number of vegetation types that qu				
	4 types or more	points =		
Map of Cowardin vegetation classes	3 types	points =		
	2 types	points =		
11.1.2 Hudroneric de (zee r. 72)	1 type	points =	= 0	Figure
H 1.2 <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydrope	priods) present within the we	tland Thow	ator rogimo has	Figure
to cover more than 10% of the wetland or				
hydroperiods.)	74 ucre to count. (See text fo	n description	0J	
Permanently flooded or inundated	4 or more types	present	points = 3	
\boxtimes Seasonally flooded or inundated	3 types	-	points = 3 points = 2	
\boxtimes Occasionally flooded or inundated	2 types	-	points = 1	2
Saturated only	51	1	1	
Permanently flowing stream or river	in, or adjacent to, the wetlan	d		
Seasonally flowing stream or river in	, or adjacent to, the wetland			
Lake-fringe wetland = 2 points				
Freshwater tidal wetland = 2 points				
H 1.3 <u>Richness of Plant Species</u> (see p. 75))	2		
Count the number of plant species in the w		ft ² . (<i>Different</i>	patches of the	
same species can be combined to meet the	size threshold.)			
You do not have to name the species.		a 1. m		
Do not include Eurasian Milfoil, reed can				
If you counter		points =		
	5 - 19 species	points =		
List species below if you want to:	<5 species	points =	= 0	
				1

Total for page 5



H 2. Does the wetland have the opportunity to provide habitat for many specie	s?)	
H 2.1 <u>Buffers</u> (see p. 80)		Figure
Choose the description that best represents condition of buffer of wetland. The highest scould	ring	
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. (re		
undisturbed also means no grazing, no landscaping, no daily human use)	Points = 5	
100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water		
>50% circumference.	Points = 4	
50 m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water	D • 4	
>95% circumference.	$\mathbf{Points} = 4$	0
100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water	Deleta 2	2
>25% circumference.	Points = 3	
1 50 m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for $250%$ eigenvectors	Points = 3	
for $> 50\%$ circumference.	Points = 3	
If buffer does not meet any of the three 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.	1 off (5 - 2)	
Light to moderate grazing or lawns are OK	Points = 2	
Heavy grazing in buffer.	Points $= 1$	
\Box 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.	Points = 1	
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 corr	idor (either	
riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, for		
native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed		
that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel	roads,	
paved roads, are considered breaks in the corridor).		
$\Box YES = 4 \text{ points } (go \text{ to } H 2.3) \qquad \Box NO = go \text{ to } H 2.2.2$		
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corr		
riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or for		
connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acr		1
OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the qu	estion	
above? \Box YES = 2 points (go to H 2.3) \Box NO = H 2.2.3		
$\square I ES = 2 \text{ points} (go to H 2.5) \qquad \square NO = H 2.2.5$ 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?		

Total for page 3_

11.2.2	\mathbf{N}_{1}	l
	Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	ich of the following priority habitats are within 330ft (100m) of the wetland? (NOTE: the	
	nections do not have to be relatively undisturbed.	
	se are DFW definitions. Check with your local DFW biologist if there are any questions	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both	
_	aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth 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%; 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.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses	
	and/or forbs form the natural climax plant community.	
	Talus: 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.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
\boxtimes	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage	
	of the oak component of the stand is 25%.	3
\boxtimes	Urban Natural Open Space: A priority species resides within or is adjacent to the open space and	
_	uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting	
	other <i>priority habitats</i> , especially those that would otherwise be isolated; and/or the open space is an	
	isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.	
	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by	
	land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is	
	at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically	
	increased above that of the open ocean by evaporation. Along some low-energy coastlines there is	
	appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-	
	derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both	
	estuaries and lagoons.	
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and	
	may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs,	
	snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and	
	that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion	
	control). If wetland has 3 or more priority habitats = 4 points	I
	If we than $has 2$ priority habitats = 3 points	I
	If we land 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.	I
	Nearby wetlands are addressed in question H 2.4)	l

2.4 Wetland Landscape (choose the one description of the landscape around the $\frac{1}{2}$	
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.development.points = 5The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 3The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe points = 3points = 3The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 3There is at least 1 wetland within ½ mile.points = 2There are no wetlands within ½ mile.points = 0	3
H 2. TOTAL Score -opportunity for providing habitat Add the scores in the column above	9
TOTAL for H 1 from page 14	
otal Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	18

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
Check off any criteria that apply to the wetland. Select the appropriate Category (from	
dropdown menu in Category column) when the appropriate criteria are met.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt.	
$\Box YES = Go \text{ to } SC 1.1 \boxtimes NO$	
	Cat. I
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park,	
National Estuary Reserve, Natural Area Preserve, State Park or Educational,	
Environmental, or Scientific Reserve designated under WAC 332-30-151?	
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the	\mathbf{C} \mathbf{A} \mathbf{I}
following three conditions? YES = Category I NO = Category II	Cat. I
The wetland is relatively undisturbed (has no diking, ditching, filling,	Cat. II
cultivation, grazing, and has less than 10% cover of non-native plant species. If	Dual
the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wathand then the wathand should be given a dual rating (I(I)). The area 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	rating
marsh with native species would be a Category I. Do not, however, exclude the	I/II
area of Spartina in determining the size threshold of 1 acre.	1/11
At least ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of shrub,	
forest, or un-grazed or un-mowed grassland.	
The wetland has at least 2 of the following features: tidal channels, depressions	
with open water, or contiguous freshwater wetlands.	
and open mater, of contiguous nesh mater netaliast	

· · · · · · · · · · · · · · · · · · ·	
SC 2.0 Natural Heritage Wetlands (see p. 87)	
Natural Heritage wetlands have been identified by the Washington Natural Heritage	Cat. I
Program/DNR as either high quality undisturbed wetlands or wetlands that support state	
Threatened, Endangered, or Sensitive plant species.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural	
Heritage wetland? (this question is used to screen out most sites before you need to	
contact WNHP/DNR)	
S/T/R information from Appendix D 🛛 or accessed from WNHP/DNR web site	
YES \square – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO \square	
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?	
$\Box YES = Category I \qquad \Box NO_not in a Heritage Wetland$	
SC 3.0 Bogs (see p. 87)	
Does the wetland (or part of the wetland) 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.	
1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or	
mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See	
Appendix B for a field key to identify organic soils)	
Yes \Box - go to Q. 3 No \boxtimes go to Q. 2	
2. Does the wetland have organic soils, either peats or mucks that are less than 16	
inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash,	
or that are floating on a lake or pond?	
Yes \Box - go to Q. 3 No \boxtimes - Is not a bog for purpose of rating	
3. Does the wetland 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 \square - Is a bog for purpose of rating No \boxtimes -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.	
1. Is the wetland forested (> 30% cover) with sitka spruce, subalpine fir, western red	
cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or	
western white pine, WITH any of the species (or combination of species) on the bog	
species plant list in Table 3 as a significant component of the ground cover (> 30%	
coverage of the total shrub/herbaceous cover)?	
2. YES \square = Category I NO \boxtimes Is not a bog for purpose of rating	
	Cat. I
	Cat. I

SC 4.0 Forested Wetlands (see p. 90)	
Does the wetland have at least 1 acre of forest that meets 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.	
at breast height (dbh) of 52 menes (81 cm) of 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-	
e	
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.	
$\Box YES = Category I \qquad \qquad \boxtimes NO \text{ not a forested wetland with special characteristics}$	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?	
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 (<i>needs</i> to be meaning the bettern)	
to be measured near the bottom) \Box	
\square YES = Go to SC 5.1 NO \square not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions?	
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation,	
grazing), and has less than 20% cover of invasive plant species (see list of invasive	
species on p. 74).	
\Box At least ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or	
un-grazed or un-mowed grassland.	
The wetland is larger than $1/10$ acre (4350 square feet)	
$YES \square = Category I \qquad NO \square = Category II$	

SC 6.0 Interdunal Wetlands (see p. 93)	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership	
or WBUO)?	
\Box YES = Go to SC 6.1 \Box NO 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:	
 Long Beach Peninsula – lands west of SR103 	
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 one acre	
or larger?	
$\Box YES = Category II \qquad \Box NO \text{ go to } SC 6.2$	
SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is	Cat.II
between 0.1 and 1 acre,?	
$\Box YES = Category III$	Cat.III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record	N/A
on p. 1.	$1 \mathbf{V} / \mathbf{A}$
If you answered NO for all types enter "Not Applicable" on p. 1.	
Comments	

The wetland has been previously disturbed, therefore, it is not high quality undisturbed wetland. Based on ELS observations on-site, the wetland does not contain state threatened or endangered species.

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among usersName of wetland (if known):Wetland GDate of site visit:Oct. 2013

Rated by <u>A. Aberle</u> Trained by Ecology? Yes <u>X</u> No_____ Date of Training: <u>Oct. 2006</u>

SECTION: 20 & 21 TOWNSHIP: 2N_RANGE: 3E Is S/T/R in Appendix D? Yes X No___

Map of wetland unit: Figure ___ Estimated size 1.94 acres

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ____ II ____ III _X _ IV _

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

· ·	
Score for Water Quality Functions	14
Score for Hydrologic Functions	5
Score for Habitat Functions	16
TOTAL Score for functions	36

Category based on SPECIAL CHARACTERISTICS of wetland

I ____ II ____ Does not Apply $\underline{\mathbf{X}}$

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



Check the appropriate type and class of wetland being rated.

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

1

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

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

Check List for Wetlands That Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed</i> <i>Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). 		Х
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		X
SP4. <i>Does the wetland 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.

Comments Formal priority and habitat species request has been completed.

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 wetland usually controlled by tides (i.e. except during floods)?

 \square NO – go to 2 \square YES – the wetland class is Tidal Fringe

If yes, is the sa	alinity of the water	during periods of	annual low flow be	low 0.5 ppt (pa	arts per
thousand)?] YES – Freshwa	ter 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.

 $\square NO - go to 3$ **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 wetland **meet both** of the following criteria?
 - The vegetated part of the wetland is on the shores of a body of 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)?
 - $\square NO go to 4$

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

- 4. Does the wetland meet all of the following criteria?
 - \bowtie The wetland is on a slope (*slope can be very gradual*),
 - \boxtimes 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.

 \boxtimes 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 <3ftdiameter and less than 1 foot deep).

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

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 flooding. \square NO - go to 6 \square **YES** – The wetland class is **Riverine**

- 6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*NO go to 7 **YES** The wetland class is **Depressional**
- 7. Is the wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

 \square NO – go to 8 \square **YES** – The wetland class is **Depressional**

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

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater	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 you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Comments

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland unit functions to improve water quality	(only 1 score per box)
S	S 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p. 64)
S	S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) points = 3 Slope is 1% - 2% 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 organic(<i>use NRCS definitions</i>) YES = 3 points NO = 0 points	0
S	 S 1.3 Characteristics of the vegetation in the wetland that traps 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, ungrazed, herbaceous vegetation > 90% of wetland area points = 6 Dense, ungrazed, herbaceous vegetation > ½ of area Dense, woody vegetation > ½ of area Dense, ungrazed, herbaceous vegetation > ¼ of area Dense, ungrazed, herbaceous vegetation > ¼ of area Does not meet any of the criteria above for vegetation points = 0 	Figure
C	Aerial photo or map with vegetation polygonsTotal for S 1Add the points in the boxes above	7
S	1	7
S	 S 2. Does the wetland 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? <i>Note which of the following conditions provide the sources of pollutants A unit may have pollutants coming form several sources, but any single source would qualify as opportunity.</i> Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland 	(see p. 67)
	 Tilled fields or orchards within 150 feet of wetland Residential, urban areas, or golf courses are within 150 ft upslope of wetland Other YES multiplier is 2 INO multiplier is 1 	multiplier
S	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	<u> </u>

S	Slope Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream erosion	(only 1 score per box)
S	S 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 68)
S S	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> 1/8 in), or dense enough, to remain</i> <i>erect during surface flows)</i> Dense, uncut, rigid vegetation covers >90% of area of the wetland. <i>points = 6</i> Dense, uncut, rigid vegetation >1/2 area of wetland Dense, uncut, rigid vegetation >1/2 area of wetland <i>points = 3</i> Dense, uncut, rigid vegetation >1/4 area of wetland <i>points = 1</i> More than 3/4 of area is grazed, mowed, tilled or vegetation <i>is not rigid</i> 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 <i>its area.</i> YES <i>points = 2</i>	3
	NO points = 0	
S	Add the points in the boxes above	5
S	 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? Note which of the following conditions apply. ☑ Wetland has surface runoff that drains to a river or stream that has flooding 	(see p. 70)
	problems Other	multiplier
	Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam.) YES multiplier is 2 NO multiplier is 1	<u>2</u>
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	5

Comments

These questions apply to wetlands of			(only 1 score per
HABITAT FUNCTIONS – Indicators that	-	-	box)
H 1. Does the wetland have the <u>potential</u>	to provide habitat for	many species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present ¹ / ₄ acre or more than 10% of the area if uni Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have > Forested (areas where trees have >30% If the unit has a forested class check if:	it is smaller than 2.5 acres >30% cover)		is 1
Forested areas have 3 out of 5 strata (ca	nopy, sub-canopy, shrubs,	, herbaceous, moss/ground-cov	
that each cover 20% within the forestee		-	
Add the number of vegetation types that qua		n sints A	
	4 types or more	points = 4 points = 2	
Map of Cowardin vegetation classes	3 types 2 types	points = 2 points = 1	
	1 type	points = 1 points = 0	
H 1.2 Hydroperiods (see p. 73)	<i></i>	•	Figure
 Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in Seasonally flowing stream or river in, or <i>Lake-fringe wetland</i> = 2 points <i>Freshwater tidal wetland</i> = 2 points 	2 types , or adjacent to, the wetlar	present points = 2 present points = 1 nd	2
H 1.3 <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the we same species can be combined to meet the s You do not have to name the species. Do not include Eurasian Milfoil, reed cand If you counted List species below if you want to:	ize threshold.) arygrass, purple loosestrif		1

Total for page $\underline{4}$

H 1.4 <u>Interspersion of habitats</u> (<i>see p. 76</i>) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Figure
None = 0 points Low = 1 point $Moderate = 2 points$	
The second secon	1
Iligh - 3 pointsNOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes	
 H 1.5 Special Habitat Features: (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. □ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). ○ Standing snags (diameter at bottom >4 inches) in the wetland □ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) □ At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) □ Invasive plants cover less than 25% of the wetland area in each stratum of plants Note: The 20% stated in early printings of the manual on page 78 is an error 	2
H 1. TOTAL Score – potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5	7

H 2. Does the wetland have the opportunity to provide habitat for many specie	es?)	
H 2.1 <u>Buffers</u> (see p. 80)		Figure
Choose the description that best represents condition of buffer of wetland. The highest sco	ring	
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. (re	•	
undisturbed also means no grazing, no landscaping, no daily human use)	Points $= 5$	
100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open wate		
>50% circumference.	Points = 4	
50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water		
>95% circumference.	Points = 4	0
100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water		2
>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 three criteria above	r on ts = 3	
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.	1 0mts – 2	
Light to moderate grazing or lawns are OK	Points = 2	
Heavy grazing in buffer.	Points $= 1$	
\Box 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.	Points = 1	
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 corr		
riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, for		
native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed	•	
that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel</i>	roaas,	
paved roads, are considered breaks in the corridor). $\Box YES = 4 \text{ points } (go \text{ to } H 2.3) \qquad \Box NO = go \text{ to } H 2.2.2$		
	ridor (oithor	
riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or fo		
connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acr		1
OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the qu		1
above?	estion	
$\Box YES = 2 \text{ points} (go \text{ to } H 2.3) \qquad \Box NO = H 2.2.3$		
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?		

Total for page 3_

11.2.2		
	Near or adjacent to other priority habitats listed by WDFW (see p. 82)	
	ch of the following priority habitats are within 330ft (100m) of the wetland? (NOTE: the	
	nections do not have to be relatively undisturbed.	
	se are DFW definitions. Check with your local DFW biologist if there are any questions	
	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both	
	aquatic and terrestrial ecosystems which mutually influence each other.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	Old-growth 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%; 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.	
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses	
	and/or forbs form the natural climax plant community.	
	Talus: 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.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	
\boxtimes	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage	
	of the oak component of the stand is 25%.	3
\boxtimes	Urban Natural Open Space: A priority species resides within or is adjacent to the open space and	
	uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting	
	other priority habitats, especially those that would otherwise be isolated; and/or the open space is an	
	isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.	
	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by	
	land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is	
	at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically	
	increased above that of the open ocean by evaporation. Along some low-energy coastlines there is	
	appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-	
	derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both	
	estuaries and lagoons.	
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and	
	may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs,	
	snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and	
	that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion	
	control).	
	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 Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
	Note. All vegetated weitands are by definition a priority habital but are not included in this list. Nearby wetlands are addressed in question H 2.4)	

I 2.4 <u>Wetland Landscape</u> (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 $\frac{1}{2}$ mile points = 5 There are at least 3 other wetlands within $\frac{1}{2}$ 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 wetlands within $\frac{1}{2}$ mile points = 3 There is at least 1 wetland within $\frac{1}{2}$ mile. points = 2 There are no wetlands within $\frac{1}{2}$ mile. points = 0	3
H 2 . TOTAL Score -opportunity for providing habitat <i>Add the scores in the column above</i>	7
TOTAL for H 1 from page 14	9
Cotal Score for Habitat Functions – 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
Check off any criteria that apply to the wetland. Select the appropriate Category (from	
dropdown menu in Category column) when the appropriate criteria are met.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt.	
\Box YES = Go to SC 1.1 \boxtimes NO	
	Cat. I
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park,	
National Estuary Reserve, Natural Area Preserve, State Park or Educational,	
Environmental, or Scientific Reserve designated under WAC 332-30-151?	
$\Box YES = Category I \qquad \qquad \Box NO \text{ go to } SC 1.2$	
SC 1.2 Is the wetland 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,	Cat. II
cultivation, grazing, and has less than 10% cover of non-native plant species. If	D 1
the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the method them the method along the detected by the species of the second species of the s	Dual
the wetland, then the wetland should be given a dual rating (I/II). The area of	rating
Sparting would be rated a Category II while the relatively undisturbed upper	I/II
marsh with native species would be a Category I. Do not, however, exclude the	I/II
area of Spartina in determining the size threshold of 1 acre. At least $\frac{3}{4}$ of the landward adge of the watland has a 100 ft buffer of shrub	
At least ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.	
The wetland has at least 2 of the following features: tidal channels, depressions	
with open water, or contiguous freshwater wetlands.	
with open water, of contiguous neshwater wettands.	

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 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 \square – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO \boxtimes	
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?	
$\Box YES = Category I \qquad \Box NO_not in a Heritage Wetland$	
SC 3.0 Bogs (see p. 87)	
Does the wetland (or part of the wetland) 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.	
1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or	
mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See	
Appendix B for a field key to identify organic soils)	
$\begin{array}{c} \text{Yes} \square \text{ - go to } Q. 3 \end{array} \qquad \qquad \text{No} \boxtimes \text{ go to } Q. 2 \end{array}$	
2. Does the wetland have organic soils, either peats or mucks that are less than 16	
inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash,	
or that are floating on a lake or pond?	
Yes \square - go to Q. 3 No \boxtimes - Is not a bog for purpose of rating	
3. Does the wetland 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 \square - Is a bog for purpose of rating No \boxtimes -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.	
<i>1.</i> Is the wetland forested (> 30% cover) with sitka spruce, subalpine fir, western red	
cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or	
western white pine, WITH any of the species (or combination of species) on the bog	
species plant list in Table 3 as a significant component of the ground cover (> 30%	
coverage of the total shrub/herbaceous cover)?	
2. YES \square = Category I NO \boxtimes Is not a bog for purpose of rating	
$2.125 \square = Category I $ $100 \square Is not a bog for purpose of fatting$	Cat. I
	Cat. I

SC 4.0 Forested Wetlands (see p. 90)	
Does the wetland have at least 1 acre of forest that meets 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.	
at breast height (doil) of 52 menes (of em) of 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.	
growth forests do not necessarily have to have needs 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.	
$\Box YES = Category I \qquad \qquad \boxtimes NO \text{ not a forested wetland with special characteristics}$	Cat. I
\square TES = Category T \square NO not a forested wettand 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?	
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)	
\square YES = Go to SC 5.1 NO \square not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions?	
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation,	
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	
grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than 1/10 acre (4350 square feet) 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than 1/10 acre (4350 square feet) 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than 1/10 acre (4350 square feet) 	

SC 6.0 Interdunal Wetlands (see p. 93)	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership	
or WBUO)?	
\Box YES = Go to SC 6.1 \Box NO 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:	
 Long Beach Peninsula – lands west of SR103 	
 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 one acre	
or larger?	
$\Box YES = Category II \qquad \qquad \boxtimes NO \text{ go to } SC 6.2$	
SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is	Cat.II
between 0.1 and 1 acre,?	
$\Box YES = Category III$	Cat.III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record	N/A
on p. 1.	11/21
If you answered NO for all types enter "Not Applicable" on p. 1.	
Comments	

The wetland has been previously disturbed, therefore, it is not high quality undisturbed wetland. Based on ELS observations on-site, the wetland does not contain state threatened or endangered species.

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among usersName of wetland (if known): Wetland ODate of site visit: Oct. 2013

Rated by <u>A. Aberle</u> Trained by Ecology? Yes <u>X</u> No_____ Date of Training: <u>Oct. 2006</u>

SECTION: <u>20</u> TOWNSHIP: <u>2N</u> RANGE: <u>3E</u> Is S/T/R in Appendix D? Yes <u>X</u> No____

Map of wetland unit: Figure __ Estimated size 0.02 acres

DRAFT SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

Ι ΙΙ ΙΙΙ ΙΙ ΙΥ Χ

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

·	
Score for Water Quality Functions	12
Score for Hydrologic Functions	1
Score for Habitat Functions	13
TOTAL Score for functions	26

Category based on SPECIAL CHARACTERISTICS of wetland

I ____ II ____ Does not Apply $\underline{\mathbf{X}}$

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



Check the appropriate type and class of wetland being rated.

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

1

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

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

Check List for Wetlands That Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland been documented as a habitat for any Federally listed</i> <i>Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		Х
 SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). 		Х
SP3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?		X
SP4. <i>Does the wetland 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.

Comments Formal priority and habitat species request has been completed.

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 wetland usually controlled by tides (i.e. except during floods)?

 \square NO – go to 2 \square YES – the wetland class is Tidal Fringe

If yes, is the sa	linity of the water	during periods of	annual low flow be	low 0.5 ppt (pa	rts per
thousand)?] YES – Freshwat	ter 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.

 \square NO – go to 3 \square 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 wetland **meet both** of the following criteria?
 - The vegetated part of the wetland is on the shores of a body of 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)?
 - \square NO go to 4 \square YE

4 **[]**YES – The wetland class is **Lake-fringe** (Lacustrine Fringe)

- 4. Does the wetland **meet all** of the following criteria?
 - The wetland is on a slope (*slope can be very gradual*), (
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

The water leaves the wetland without being impounded? NOTE: Surface water does not pond in these 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).

 \square NO - go to 5 \square **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 flooding. \square NO - go to 6 \square **YES** – The wetland class is **Riverine**

- 6. Is the wetland in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*NO go to 7 **YES** The wetland class is **Depressional**
- 7. Is the wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

 \square NO – go to 8 \square **YES** – The wetland class is **Depressional**

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

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater	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 you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Comments

S	Slope Wetlands	Points	
	WATER QUALITY FUNCTIONS - Indicators that wetland unit functions to improve water quality	(only 1 score per box)	
S	S 1. Does the wetland have the <u>potential</u> to improve water quality?		
S	S 1.1 Characteristics of average slope of wetland: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)points = 3 Slope is 1% - 2% 	0	
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay organic(<i>use NRCS definitions</i>) YES = 3 points NO = 0 points	0	
S	S 1.3 Characteristics of the vegetation in the wetland that traps 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. 		
S	Aerial photo or map with vegetation polygonsTotal for S 1Add the points in the boxes above	6	
S	S 2. Does the wetland 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? <i>Note which of the following conditions provide the sources of pollutants A unit may have pollutants coming form several sources, but any single source would qualify as opportunity</i> □ Grazing in the wetland or within 150 ft □ Untreated stormwater discharges to wetland □ Tilled fields or orchards within 150 feet of wetland		
	 Residential, urban areas, or golf courses are within 150 ft upslope of wetland Other YES multiplier is 2 NO multiplier is 1 	2	
S	YES multiplier is 2 NO multiplier is 1 TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	<u>2</u> 12	

S	Slope Wetlands	Points
	HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream erosion	(only 1 score per box)
S	S 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 68)
S S	 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> 1/8 in), or dense enough, to remain</i> <i>erect during surface flows)</i> Dense, uncut, rigid vegetation covers >90% of area of the wetland. points = 6 Dense, uncut, rigid vegetation >1/2 area of wetland Dense, uncut, rigid vegetation >1/4 area of wetland More than 3/4 of area is grazed, mowed, tilled or vegetation is not rigid 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 	1
	its area. $YES ext{ points} = 2 ext{ NO } ext{ points} = 0$	0
S	Add the points in the boxes above	1
S	 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> ☑ Wetland has surface runoff that drains to a river or stream that has flooding 	(see p. 70)
	problems Other	multiplier
	Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam.) YES multiplier is 2 NO multiplier is 1	<u>2</u>
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	1

Comments

These questions apply to wetlands of	•		Points (only 1
HABITAT FUNCTIONS – Indicators that	wetland functions to pro	ovide important habitat	score per box)
H 1. Does the wetland have the potentia	l to provide habitat for	many species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present ^{1/4} acre or more than 10% of the area if un Aquatic bed Emergent plants Scrub/shrub (areas where shrubs have Forested (areas where trees have >30%	it is smaller than 2.5 acres		<i>s</i> Figure
If the unit has a forested class check if: Forested areas have 3 out of 5 strata (c cover) that each cover 20% within the Add the number of vegetation types that qu	anopy, sub-canopy, shrubs forested polygon <i>alify. If you have:</i> 4 types or more	points = 4	1
Map of Cowardin vegetation classes	3 types 2 types 1 type	points = 2 points = 1 points = 0	
H 1.2 <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroper cover more than 10% of the wetland or ¼ c □ Permanently flooded or inundated □ Occasionally flooded or inundated	<i>acre to count. (See text for</i> 4 or more types 3 types	description of hydroperiods.)	, Figure
 Saturated only Permanently flowing stream or river in Seasonally flowing stream or river in, Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points 	or adjacent to, the wetland		1
H 1.3 <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wasame species can be combined to meet the 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:	etland that cover at least 10 size threshold.) arygrass, purple loosestrif		1

Total for page $\underline{1}$

H 1.4 Interspersion of habitats (see p. 76) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Figure
None = 0 points Low = 1 point Moderate = 2 points	1
NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes	
 H 1.5 Special Habitat Features: (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. □ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). □ Standing snags (diameter at bottom >4 inches) in the wetland □ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) □ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) □ At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) □ Invasive plants cover less than 25% of the wetland area in each stratum of plants Note: The 20% stated in early printings of the manual on page 78 is an error 	0
H 1. TOTAL Score – potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5	4

H 2. Does the wetland have the opportunity to provide habitat for many specie	es?)	-
H 2.1 <u>Buffers</u> (see p. 80)		Figure
Choose the description that best represents condition of buffer of wetland. The highest scould	ring	
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. (re	-	
undisturbed also means no grazing, no landscaping, no daily human use) \Box	Points $= 5$	
100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water		
 >50% circumference. 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water 	Points = 4	
>95% circumference.	Points = 4	
100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water		2
>25% circumference.	Points = 3	L
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 three 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	
\Box No paved areas or buildings within 50m of wetland for >50% circumference.		
Light to moderate grazing or lawns are OK	$\mathbf{Points} = 2$	
Heavy grazing in buffer.	Points = 1	
\Box 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.	Points = 1	
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 corr	idor (either	
riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, for		
native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed		
that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel</i>		
paved roads, are considered breaks in the corridor).	,	
$\Box YES = 4 \text{ points } (go \text{ to } H 2.3) \qquad \Box NO = go \text{ to } H 2.2.2$		
H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corr	idor (either	
riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or for	rest, and	
connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acr		1
OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the qu	estion	
above?		
$\Box YES = 2 \text{ points } (go \text{ to } H 2.3) \qquad \Box NO = H 2.2.3$		
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 pacture (>40 agres) OP		
within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres?		

Total for page 3_

Ц) 2	Near or adjacent to other priority hebitate listed by $WDEW$ (see p. 92)	1
	<u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82) ich of the following priority habitats are within 330ft (100m) of the wetland? (<i>NOTE: the</i>	l
		1
	nections do not have to be relatively undisturbed.	1
	se are DFW definitions. Check with your local DFW biologist if there are any questions	1
\square	Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both	1
	aquatic and terrestrial ecosystems which mutually influence each other.	1
	Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).	1
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	l
	Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming	l
	a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81	1
	cm (32 in) dbh or > 200 years of age.	l
	Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be	1
	less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	1
	generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	l
	Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses	l
_	and/or forbs form the natural climax plant community.	1
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed	l
	of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be	1
	associated with cliffs.	1
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages	1
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage	1
	of the oak component of the stand is 25%.	3
\square	Urban Natural Open Space: A priority species resides within or is adjacent to the open space and	1
	uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting	l
	other <i>priority habitats</i> , especially those that would otherwise be isolated; and/or the open space is an	l
	isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.	l
	Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by	1
	land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is	1
	at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically	1
	increased above that of the open ocean by evaporation. Along some low-energy coastlines there is	l
	appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-	1
	derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both	1
	estuaries and lagoons.	1
	Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and	1
	may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs,	l
	snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and	1
	that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion	1
	control).	I
	If we land has 3 or more priority habitats = 4 points	l
	If we than $1 \text{ priority habitats} = 3 \text{ points}$	l
	If wetland has 1 priority habitat = 1 point Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	l
	Nearby wetlands are addressed in question H 2.4)	l

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 points = 5development.points = 5The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe 	3
H 2 . TOTAL Score -opportunity for providing habitat <i>Add the scores in the column above</i>	9
TOTAL for H 1 from page 14	4
otal Score for Habitat Functions – 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
Check off any criteria that apply to the wetland. Select the appropriate Category (from	
dropdown menu in Category column) when the appropriate criteria are met.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland meet the following criteria for Estuarine wetlands?	
The dominant water regime is tidal,	
Vegetated, and	
With a salinity greater than 0.5 ppt.	
\Box YES = Go to SC 1.1 \Box NO	
	Cat. I
SC 1.1 Is the wetland within a National Wildlife Refuge, National Park,	
National Estuary Reserve, Natural Area Preserve, State Park or Educational,	
Environmental, or Scientific Reserve designated under WAC 332-30-151?	
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the	Cat. I
following three conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling,	Cat. I Cat. II
cultivation, grazing, and has less than 10% cover of non-native plant species. If	Cat. II
the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of	Dual
the wetland, then the wetland should be given a dual rating (I/II). The area of	rating
Spartina would be rated a Category II while the relatively undisturbed upper	Tutting
marsh with native species would be a Category I. Do not, however, exclude the	I/II
area of Spartina in determining the size threshold of 1 acre.	
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.	
The wetland has at least 2 of the following features: tidal channels, depressions	
with open water, or contiguous freshwater wetlands.	

SC 2.0 Natural Heritage Wetlands (see p. 87)	
Natural Heritage wetlands have been identified by the Washington Natural Heritage	Cat. I
Program/DNR as either high quality undisturbed wetlands or wetlands that support state	
Threatened, Endangered, or Sensitive plant species.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural	
Heritage wetland? (this question is used to screen out most sites before you need to	
contact WNHP/DNR)	
S/T/R information from Appendix D 🛛 or accessed from WNHP/DNR web site	
YES \square – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO \square	
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?	
\Box YES = Category I \Box NO_not in a Heritage Wetland	
SC 3.0 Bogs (see p. 87)	
Does the wetland (or part of the wetland) 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.	
1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or	
mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See	
Appendix B for a field key to identify organic soils)	
Yes \Box - go to Q. 3 No \boxtimes go to Q. 2	
2. Does the wetland have organic soils, either peats or mucks that are less than 16	
inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash,	
or that are floating on a lake or pond?	
Yes \Box - go to Q. 3 No \boxtimes - Is not a bog for purpose of rating	
3. Does the wetland 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 \square – Is a bog for purpose of rating No \boxtimes -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.	
1. Is the wetland forested (> 30% cover) with sitka spruce, subalpine fir, western red	
cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or	
western white pine, WITH any of the species (or combination of species) on the bog	
species plant list in Table 3 as a significant component of the ground cover (> 30%	
coverage of the total shrub/herbaceous cover)?	
2. YES \square = Category I NO \boxtimes Is not a bog for purpose of rating	
	Cat. I

SC 4.0 Forested Wetlands (see p. 90)	
Does the wetland have at least 1 acre of forest that meets 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.	
at breast height (doil) of 52 menes (of em) of 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.	
growth forests do not necessarily have to have needs 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.	
$\Box YES = Category I \qquad \qquad \boxtimes NO \text{ not a forested wetland with special characteristics}$	Cat. I
\square TES = Category T \square TO not a forested wettand 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?	
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)	
\square YES = Go to SC 5.1 NO \square not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions?	1
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation,	
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	
grazing), and has less than 20% cover of invasive plant species (see list of invasive	
grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than 1/10 acre (4350 square feet) 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than 1/10 acre (4350 square feet) 	
 grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). At least ³/₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than 1/10 acre (4350 square feet) 	

SC 6.0 Interdunal Wetlands (see p. 93)	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership	
or WBUO)?	
\Box YES = Go to SC 6.1 \Box NO 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:	
 Long Beach Peninsula – lands west of SR103 	
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 one acre	
or larger?	
$\Box YES = Category II \qquad \qquad \boxtimes NO \text{ go to } SC 6.2$	
SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is	Cat.II
between 0.1 and 1 acre,?	
\Box YES = Category III	Cat.III
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categories, and record	N/A
on p. 1.	$1 \mathbf{V} / \mathbf{A}$
If you answered NO for all types enter "Not Applicable" on p. 1.	
Comments	

The wetland has been previously disturbed, therefore, it is not high quality undisturbed wetland. Based on ELS observations on-site, the wetland does not contain state threatened or endangered species.

Appendix D

Historic Aerial Photos Figure D-1 Wetland G Historic Aerials

