JONES FAMILY TRUST EDGEMOOR PROPERTY BIOLOGICAL CRITICAL AREAS RECONNAISSANCE & DELINEATION REPORT BELLINGHAM, WASHINGTON

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Prepared for:

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QUALIFICATIONS

Elizabeth Binney, PhD, PWS is a plant/wetland ecologist with over 20 years of experience with wetland delineation, stream assessment, and fish and wildlife assessment beginning in 1988. She earned her doctorate in Plant Ecology from the University of British Columbia. Dr. Binney teaches wetland identification and delineation courses at Portland State University, University of Washington, and Western Washington University as well wetland assessment, general biology and ecology, and biostatistics. She is a student advisor for the University of Washington Wetland Science and Management Certificate Program. Dr. Binney is a certified Professional Wetland Scientist (PWS certification number 1169) through the Society of Wetland Scientists Professional Certification Program and is a certified wetland delineator through the Seattle District of the U.S. Army Corps of Engineers provisional Wetland Delineator Certification She completed the five-day training course for the Washington State Wetland Function Assessment Project Methods for Assessing Wetland Functions and the two-day training for the Department of Ecology wetland rating system. Her areas of expertise include wetland identification, wetland delineation, wetland mitigation design, wetland restoration design, stream and fish and wildlife assessments, permitting, project management, vegetation analysis, native plant identification, native plant landscape design, and statistical analyses.

Dr. Binney performed the field reconnaissance, identified and delineated the wetland, identified fish and wildlife habitat conservation areas, and authored this report.

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1.0 EXECUTIVE SUMMARY

Pacific Ecological Consultants, LLC reviewed the approximate 40 acre Jones Edgemoor Property and within 300 feet property for biological critical areas. The property is located in Bellingham, Washington and is adjacent to Mud Bay, in the northern portion of Chuckanut Bay. A Category III palustrine forested seasonally flooded/saturated slope occurs in the northeast portion of the property. The on-site portion of the wetland, Wetland A, is 20,511 square feet in size. With current land use intensity as high, the City of Bellingham regulated standard wetland buffer for this wetland is 80 feet. Fish and Wildlife Habitat Conservation Area (BMC 16.55.470) include the parcel as a Urban Natural Open Space, the mud flats of Mud Bay as Priority Habitat, and an 800 foot Bald Eagle Management Zone landward of the shoreline that includes observed bald eagle perch habitat along the shoreline.

2.0 INTRODUCTION

As requested by the Anne Jones Family Trust LP, Pacific Ecological Consultants, LLC reviewed the parcels (approximately 40 acres total), referred to as the Edgemoor Property for the purposes of this report, in December 2009 to determine the presence of wetlands, streams, and priority species and habitats/habitat conservation areas (biological critical areas). The parcel is located north of Chuckanut Bay in the City of Bellingham Edgemoor Neighborhood, Washington, within a portion of Section 13, Township 37 North, Range 2 East, W.M. (Figures 1 and 2).

The purpose of our review is to provide an assessment of the presence, location, and extent of biological critical areas and associated buffers under the jurisdiction of the City of Bellingham, the Washington State Department of Ecology (Ecology), the U.S. Army Corps of Engineers (Corps), and any other relevant agency.

3.0 METHODS

3.1 Preliminary & On-site Review

To determine the presence and extent of wetlands, streams, habitat conservation areas, and other biological critical areas on the Edgemoor Property we perform a preliminary data review and an on-site field reconnaissance. The preliminary data review includes but is not limited to a review of the following documents: the National Wetland Inventory (NWI); local jurisdiction wetland, stream, habitat, and species maps; Natural Resource Conservation Service (NRCS) soil surveys; NRCS hydric soil lists; topographic maps; and, aerial photographs. The on-site field reconnaissance involves traversing the entire property to identify wetlands and other critical areas/habitats, and collecting data to characterize the dominant plant communities, soils, and hydrology. Figure 2 depicts the approximate locations of the sample points. Data Forms for individual sample points are in Appendix A.

The goal of this review is to describe the biological aspects of the parcel in order to provide sufficient information for the client and regulating agency to make informed decisions regarding wetlands, streams, and other critical areas.

3.2 Wetland Identification & Delineation

The wetlands referred to in this report follow the Corps definition: "...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." (Environmental Laboratory 1987) and the State of Washington, Washington State Wetlands Identification and Delineation Manual (Washington State Department of Ecology 1997). Through Section 404 of the Clean Water Act, the Corps has the authority to regulate the placement of fill materials in wetlands and other waters of the U.S., and requires permits for such activities. The state has jurisdiction over wetlands and other waters through Section 401 of the Clean Water Act and the State Clean Water Act 90.48 RCW.

All wetlands are identified and delineated based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology as described in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987), Corps Regional Supplements (Army Corps of Engineers 2008), and the Washington State Wetlands Identification and Delineation Manual (Washington State Department of Ecology 1997). March 1997. All three parameters must be present for an area to be considered a jurisdictional wetland under normal circumstances. Atypical situations and problem areas are treated per the Corps and state manuals.

All other ecological investigative work utilizes standard methods and protocols for the respective discipline, e.g., fish and wildlife assessments, priority habitats and species, listed species, vegetation analysis, hydrology monitoring, etc. The City of Bellingham County regulates all activities in and around wetlands, streams, and other critical areas through the City of Bellingham Municipal Code Chapter 16.55 Critical Areas (BMC 16.55).

3.3 Wetland Categorization & Function Assessment

In order to categorize wetlands we use the local jurisdiction system or the revised Washington State Wetland Rating System for Western Washington (Hruby 2004) if the local jurisdiction lacks a categorization system. This system takes into account the hydrogeomorphic class of the wetland, sensitivity to disturbance, significance of the wetland, its degree of rarity, replacement potential replaced, and functions the wetland provides.

We evaluate wetland function with the Methods for Assessing Wetland Functions Volume I: Riverine and Depressional Wetlands in the Lowlands of Western Washington (WAFAM; Hruby et al. 1999). This method is based on the hydrogeomorphic classification, which classifies wetlands based on landscape position and hydrologic regime. WAFAM relies on indicators of functions to assess potential performance and the opportunity the wetland has to perform that function.

When the WAFAM method is not applicable, e.g., slope, lacustrine fringe, or flats wetlands, wetlands outside of the lowlands, or wetlands that are too small we use a qualitative assessment based on a combination of best professional judgment, experience, the wetland functions listed in the *Washington State Wetland Rating System for Western Washington* (Hruby 2004) and WAFAM, as well as several other wetland functional assessment methods.

4.0 SITE DESCRIPTION

4.1 Preliminary Document Review

4.1.1 City of Bellingham Wetland Inventory Map

The City of Bellingham Wetland Inventory Map (2003) does not map wetlands on or near (within approximately 300 feet) of the Jones Edgemoor Property. We identified and delineated a wetland in the northeast portion of the property (Figures 2 and 3).

4.1.2 NWI

The National Wetlands Inventory (NWI) does not map wetlands on or near the Jones Edgemoor Property (Figure 4). Mud Bay, the north end of Chuckanut Bay that borders the property, is mapped as an estuary. As stated above, we observed a wetland in the northeast portion of the property (Figures 2 and 3).

4.1.3 NRCS Soils

The Natural Resource Conservation Service (NRCS) Web Soil Survey maps the 52-Everett-Urban land complex, 5 to 20 percent slopes and the 110-Nati loam, 30 to 60 percent slopes soil units on the Jones Edgemoor Property (Figure 5). These soil units are not listed as hydric by the NRCS; however, they contain hydric soil inclusions. Excerpts of the NRCS descriptions for these soil units (Goldin 1992):

52-Everett-Urban land complex, 5 to 20 percent slopes. This map unit is on outwash terraces. This unit is 50 percent Everett gravelly sandy loam and 30 percent Urban land. The components of this unit occur as areas so intricately intermingled that mapping them separately was not practical at the selected scale of mapping.

Included in this unit are small areas of Chuckanut, Squalicum, Sehome, Whatcom, and Labounty soils and small areas of Everett soils that have slopes of more than 20 percent or less than 5 percent. Included areas make up about 20 percent of the total acreage.

The Everett soil is deep and well drained. It formed in a mixture of volcanic ash and alluvium over glacial outwash and glacial till. When mixed to a depth of 6 inches, the surface layer is dark yellowish brown gravelly sandy loam. The upper 7 inches of the subsoil is dark brown gravelly sandy loam. The lower 12 inches is strong brown very gravelly sandy loam. Dense glacial till that crushes to very gravelly sandy loam is at a depth of 41 inches. The dense glacial till ranges from 40 to 60 inches. The dense glacial till is similar to a cemented pan. In some areas the surface layer is very gravelly sandy loam and the soil has 15 to 35 percent rock fragments in the subsoil. In other areas the soil is very gravelly sandy loam in the upper part of the substratum, has dense glacial till below a depth of 60 inches, or weakly cemented dense glacial till.

Permeability is moderate in the upper part of the Everett soil, rapid in the next part, and very slow in the dense glacial till. Available water capacity is low. The effective rooting depth is limited by a seasonal high water table, which is at a depth of 3.5 to 5.0 feet from the December through April. Runoff is medium, and the hazard of water erosion is moderate.

The Urban land consists of areas covered by streets, buildings, parking lots, and other structure that so obscure the soils that identification of the soil series is not feasible.

110-Nati loam, 30 to 60 percent slopes. This moderately deep, well drained soil is on foothill back slopes and ridges. It formed in colluviums and slope alluvium with an admixture of volcanic ash and glacial till. The colluvium and alluvium are derived from sandstone and siltstone.

Typically, the surface is covered with a mat of needles, leaves, and twigs1 inches thick. The surface layer is dark brown loam 10 inches thick. The subsoil is dark yellowish brown loam 28 inches thick. Sandstone is at a depth of about 38 inches. The depth to sandstone or siltstone ranges from 20 to 40 inches. In some areas the surface layer is sandy loam or silt loam. In other areas the soils is 40 to 60 inches deep over bedrock.

Included in this unit are small areas of Squalicum, Sehome, Chuckanut, and Comar soils; Bellingham and Shalcar soils in depressions; Rock outcrop; and Nati soils that have slopes of more than 60 percent or less than 30 percent. Included areas make up about 10 percent of the total acreage.

Permeability is moderate in the Nati soil. Available water capacity also is moderate. The effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

4.1.4 WDFW PHS Map

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) maps and report map the entire property and surrounding area as containing priority habitat. Priority species are mapped on Clark's Point and in Chuckanut and Mud Bays. The property is mapped as Urban Natural Open Space and within 800 feet landward of the shoreline is mapped as Bald Eagle (*Haliaeetus leucocephalus*) Buffer Management Zone. Mud Bay is mapped with the following Priority Habitats: Eelgrass; Turf Algae; Potential Surf Smelt/Sand Lance Spawning Areas; and, Hardshell Intertidal Clam.

4.2 General Site Description

The approximate 40 acre Jones Edgemoor Property is located in the southern portion of the City of Bellingham, north of Chuckanut Bay, in the Edgemoor Neighborhood (Figures 1 and 2). The parcel abuts Mud Bay, which is at the north end of Chuckanut Bay (Figures 1 and 2). Land use in the vicinity of the property is a mix of residential and open space. The property is on a hillslope that generally slopes south-southeast to Mud Bay. It consists of coniferous forest that appears to have been logged ca. 1970. A palustrine forested (PFO) wetland was identified and delineated in the northeast portion of the property (Wetland A; Figures 2 and 3). A seep that discharges from the slope then percolates back into the ground was observed near the southeast corner of the property (Figure 3). A number of trees along the shoreline are suitable bald eagle perch trees.

We did not observe any other wetlands, streams, or habitat conservation areas on or within approximately 300 feet of the project site.

4.2.1 Vegetation

The vegetation on the property is predominantly upland coniferous forest that was logged ca. 1970 with wetland vegetation in the PFO wetland located in the northeast corner of the property (Figures 1-3). The upland forest is fairly homogenous throughout the property with a younger stand of alder and willow saplings along the 10th Street right of way and a canopy dominated by maple along Viewcrest Road. An area south of Viewcrest Road within what appears to be an historic rock borrow bit is dominated by deciduous trees. A number of trees have been cut between the 10th Street right of way and the forested wetland and within the wetland (Figure 3).

Hydrophytic vegetation is one component of a wetland. Plant indicators (Reed 1988, 1993; Lichvar and Kartesz. 2009) are used to determine the presence of hydrophytic vegetation. Hydrophytic vegetation is generally dominated by plants with an indicator status of Facultative (FAC), Facultative Wetland (FACW), or Obligate Wetland (OBL) (Environmental Laboratory 1987; U.S. Army Corps of Engineers 2008). Indicator status of Facultative Upland (FACU) and Obligate Upland (UPL) are given to plants that usually occur in non-wetlands or nearly always occur in non-wetlands respectively. No Indicator (NI) is given to species where sufficient information is lacking to give the species an indicator status.

Upland Coniferous Forest

This vegetation type occurs throughout the property. This vegetation type is dominated by a canopy of Douglas fir (*Pseudotsuga menziesii*; FACU) with a subordinate of big leaf maple (*Acer macrophyllum*; FACU), and generally low cover (10 percent or less) of Scouler's willow (*Salix scouleriana*; FAC), western yew (*Taxus brevifolia*; UPL), Pacific madrone (*Arbutus menziesii*; UPL), and bitter cherry (*Prunus emarginata*; FACU). The shrub layer is dominated by an often dense cover of salal (*Gaultheria shallon*; FACU) and in some areas is dominated by Oregon grape (*Mahonia nervosa*; FACU), with subordinates of beaked hazelnut (*Corylus cornuta*; FACU), ocean spray (*Holodiscus discolor*; UPL), wood rose (*Rosa gymnocarpa*; FACU), red huckleberry (*Vaccinium parvifolium*; UPL), and serviceberry (*Amelanchier alnifolia*; FACU). The herbaceous layer is dominated by sword fern (*Polystichum munitum*; FACU) with low cover of trailing blackberry (*Rubus ursinus*; FACU) in some areas.

The area along the upper portion of the 10th Street right of way and between the right of way and the forested wetland (Sample Point 8; Figure 2) is dominated by a dense stand of sapling to young trees of Scouler's willow and red alder (*Alnus rubra*; FAC).

A small area in the northern portion of the property, south of Viewcrest Road, in what appears to be an historic rock borrow pit (Sample Point 5; Figure 2) is dominated by a canopy of fairly even distribution of red alder, big leaf maple, paper birch (*Betula papyrifera*; FAC), and Douglas fir. The shrub layer is dominated by ocean spray. The herbaceous layer is dominated by sword fern, Henderson's sedge (*Carex hendersonii*; FAC), and trailing blackberry.

The area along Viewcrest Road is dominated by a canopy of big leaf maple with a subordinate of western red cedar (*Thuja plicata*; FAC). The shrub layer is dominated by snowberry, Indian

plum, vine maple, and ocean spray. The herbaceous layer is dominated by sword fern with sparse cover of stinging nettle (*Urtica dioica*; FAC).

Palustrine Forested Wetland

Wetland vegetation occurs in the palustrine forested wetland in the northeast portion of the property (Figures 2 and 3). It is dominated by a canopy of red alder with a shrub layer dominated by salmonberry (*Rubus spectabilis*; FAC). The herbaceous layer is dominated by giant horsetail (*Equisetum telmateia*; FACW), lady fern (*Athyrium filix-femina*; FAC), and Watson's willow herb (*Epilobium ciliatum*; FACW). Hydrophytic vegetation in this wetland was met by the Dominance Test (Indicator 1; U.S. Army Corps of Engineers 2008).

4.2.2 Soils

Upland Forest

Soils observed in the uplands were generally characteristic of the NRCS mapped Everett and Nati soil units. The soils were generally very dark brown (10YR 2/2) sandy loam in the top 8 to 10 inches underlain by very dark grayish brown (10YR 3/2) sandy gravelly loam or gravelly sandy loam. Deeper soils along the bluffs at the southern end of the parcel were gray (2.5Y 5/1) silty loams in the top approximate 8 inches and are underlain by dark yellowish brown (10YR 3/4) silty loam.

Palustrine Forested Wetland

The soils observed in the PFO wetland were black (10YR 2/1) sandy silt loams in the top 10 inches underlain by grayish brown (2.5Y 4/2) gravelly silt loam with 20 percent dark yellowish brown (10YR 4/4) redox concentrations as soft masses on the ped faces. This soil meets hydric soil indicators Depleted Matrix Below Dark Surface (A1) and Depleted Matrix (F6) Indicators (U.S. Army Corps of Engineers 2008).

4.2.3 Hydrology

Our reconnaissance and wetland delineation occurred during the typical wet season for this region. Surface hydrology was only observed in the PFO wetland and seasonal seep. Hydrology was observed at 7.5 inches below the surface in the area dominated by Scouler's willow and red alder (Sample Point 8; Figure 2). This area is upslope of the PFO wetland. This area does not have indicators of hydrophytic vegetation or hydric soil.

Wetland hydrology was observed in the PFO wetland (Sample Plot 7; Figure 2). Observed wetland hydrology consisted of areas of surface water with up to three inches of ponding, saturation to the soil surface, and what appears to be a seasonal high/perched water table. Wetland hydrology in this wetland was met by Indicators A1, A2, and A3 (U.S. Army Corps of Engineers 2008). Hydrology appears to be from upslope runoff and seasonal groundwater discharge. Water from the wetland enters a stormwater system where the water eventually flows to Mud Bay.

The seasonal seep (Figure 3) is an area of groundwater discharge. Water from the seep discharges from the hillslope then percolates back into the ground prior to reaching Mud Bay, with no direct surface connection to the bay. Several smaller seeps were observed in this area.

5.0 WETLANDS

5.1 General Description

The on-site PFO wetland occurs in the northeast corner of the parcel (Wetland A; Figures 2 and 3). We identified and delineated the wetland boundaries of the on-site wetland in the field in December 2009; the wetland boundary was surveyed by Pacific Survey and Engineering in December 2009. The wetland continues off-site to the north and east; however, the majority of the wetland is on the Jones Edgemoor Property.

The wetland is a palustrine forested seasonally flooded/saturated (PFOE) slope wetland. Hydrology, as stated above, appears to be from upslope runoff and seasonal ground water discharge. Water from the wetland flows to Mud Bay via a storm drain system.

5.2 Wetland Rating

Wetland Categories (I – IV) are determined through the Washington State Wetland Rating System (Hruby 2004) per BMC 16.55.280 (rating forms are in Appendix B). The wetland category is used in combination with the rating habitat score and land intensity use to determine the standard buffer width (BMC 16.55.340). The rating system (Hruby 2004) rates wetlands based on their hydrogeomorphic classification (HGM). The PFO wetland, Wetland A, is rated as a Category III Wetland with a Habitat Score of 18 (Appendix B).

5.3 Wetland Function Evaluation

Wetland function potential is dependent upon the amount of seasonal inundation, vegetation composition, and soils present. Opportunity for the wetland to perform any particular function is primarily dependent upon the surrounding landscape. This wetland is a slope wetland so cannot be assessed by WAFAM, therefore a qualitative function evaluation for the PFO wetland, Wetland follows.

This wetland is a slope wetland. Hydrologic functions are inherently low for slope wetlands as there is little to no water storage or attenuation, although it does function as a groundwater discharge area. This wetland does not have opportunity to reduce flooding and erosion as runoff does not drain to streams or rivers with flooding problems. Water from the wetland is directed to a stormwater drain. Water quality function for this wetland are low as well, partially because of the nature of a slope wetland and partially because there is not a naturally well developed herbaceous layer. This wetland does have opportunity to improve water quality because it adjacent and downslope of residential areas. Habitat functions are increased by the proximity to Mud Bay and the buffer provided by the undisturbed upland forest. The wetland has snags and logs that provide habitat. The wetlands may have habitat functions related to amphibians forage; however, the wetlands do not appear to have the duration of hydrology necessary for amphibian breeding.

6.0 HCA/PRIORITY SPECIES & HABITATS

6.1 General Habitat

Wildlife habitats on the property consist of upland forest, PFO wetland, marine shoreline, and mud flats. The property is on the south edge of a residential area, and is surrounded by developed residential land on three sides. The property because it is contiguousness with the marine shoreline and mud flats provide for wildlife habitat in this area (Figure 1). Wildlife observed on the parcel by direct observation or signs (e.g., scat or tracks) include black-tailed deer (*Odocoileus hemionus*), pileated woodpecker (*Dryocopus pileatus*), and Douglas' squirrel (*Tamiasciurus douglasii*). Other species that likely occur on the property include accipiters such as the sharp-shinned hawk (*Accipiter striatus*) and Cooper's hawk (*Accipiter cooperii*), songbird, other woodpecker species as well as, amphibians, and small mammals such as mice and voles. In addition, bald eagle perch habitat was observed along the shoreline.

6.2 Priority Habitat and Species

WDFW Priority Habitats and Species are City of Bellingham Fish and Wildlife Habitat Conservation Areas (HCAs) (BMC 16.55.470 A). WDFW maps the property as Urban Natural Open Space and within 800 feet landward of the shoreline is mapped as Bald Eagle (*Haliaeetus leucocephalus*) Buffer Management Zone. Mud Bay is mapped with the following Priority Habitats: Eelgrass; Turf Algae; Potential Surf Smelt/Sand Lance Spawning Areas; and, Hardshell Intertidal Clam.

We did not observe any other endangered, threatened, or sensitive plant or animal species or priority habitats regulated by the City of Bellingham, Washington State, or the federal government on the subject parcel.

7.0 DETERMINATION & REGULATIONS

7.1 Determination

We identified a Category III slope PFO wetland, Wetland A, in the northeast portion of the Jones Edgemoor Property (Figures 2 and 3). The on-site portion of the wetland is 20,511 square feet in size. Wetland identification was made by the presence of positive indicators of hydrophytic vegetation, hydric soil, and although marginal, wetland hydrology. We did not observe any other wetlands within approximately 300 feet of the property boundaries.

We observed the following HCAs on and adjacent to the property: Urban Natural Open Space; bald eagle perch habitat along the shoreline inclusive of the 800 foot Bald Eagle Buffer Management Zone; and priority habitat in the mud flats of Mud Bay as listed in Section 6.

The seasonal seep (Figure 3) and the smaller seeps in this general area do not appear to be biological critical areas (HCA stream) because they lack a surface connection to Mud Bay. Seeps such as these are often consider geological critical areas (BMC 16.55). Geological critical areas are beyond the scope of this report; please refer to the Geologic Feasibility Study (Element Solutions 2009).

7.2 Regulation

7.2.1 City of Bellingham Regulations

Wetland

The City of Bellingham regulates the on-site wetland and associated buffers (BMC 16.55). Wetland buffer widths are based on a combination of the wetland category, Habitat Score from the wetland rating, and land use intensity (BMC 16.55.340). The current land use intensity per BMC 16.55.510) is high. The on-site PFO wetland, Wetland A, has a standard 80 foot buffer (BMC 16.55.340 B). Buffers are measured in horizontally in a landward direction from the edge of the wetland boundary as surveyed in the field. Permits are required and mitigation is generally required for any impacts to wetlands or associated buffers.

Fish & Wildlife HCA

Fish and Wildlife Habitat Conservation Area (BMC 16.55.470) include the parcel as a Urban Natural Open Space, mud flats of Mud Bay, and an 800 foot Bald Eagle Management Zone landward of the shoreline that include bald eagle perch habitat along the shoreline.

7.2.2 Federal and State Regulations

The U.S. Army Corps of Engineers (Corps) requires notification of all disturbances/impacts to all wetlands, streams, and other waters and it is incumbent upon the landowner to disclose such disturbances. Isolated wetlands are not under the jurisdiction of the Corps; however, the Corps must determine isolated wetland status. Through Section 404 of the Clean Water Act wetland disturbances/impacts generally require a Nationwide Permit or an Individual Permit from the Corps depending upon disturbance/impacts and project type. The Washington State Department of Ecology (Ecology) and the Environmental Protection Agency (EPA) require Section 401 water quality certification for disturbance of wetlands depending upon the type of project. Ecology regulates all wetlands (RCW 90.48). Compensatory mitigation and an alternatives analysis are generally required for wetland disturbances/impacts by both the Corps and Ecology. Both require certification that no listed nor known endangered, threatened, or sensitive plant or animal species, or National Historic Places are present on the parcel.

8.0 LIMITATIONS

We have used the most current, established methods to make determinations as to the location, size, and types of wetlands on this parcel. All of the above statements are based on our best professional judgment. Although we follow the federal, state, and local criteria, we cannot guarantee that the U.S. Army Corps of Engineers or the local jurisdiction determination will correspond to ours. Please note that regulations pertaining to wetlands and other critical areas are subject to change over time.

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FIGURES

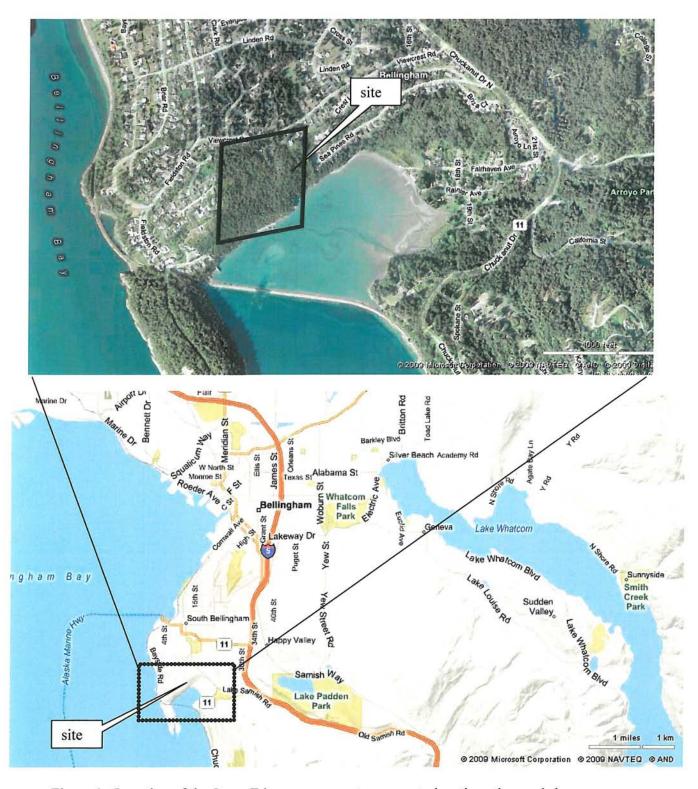
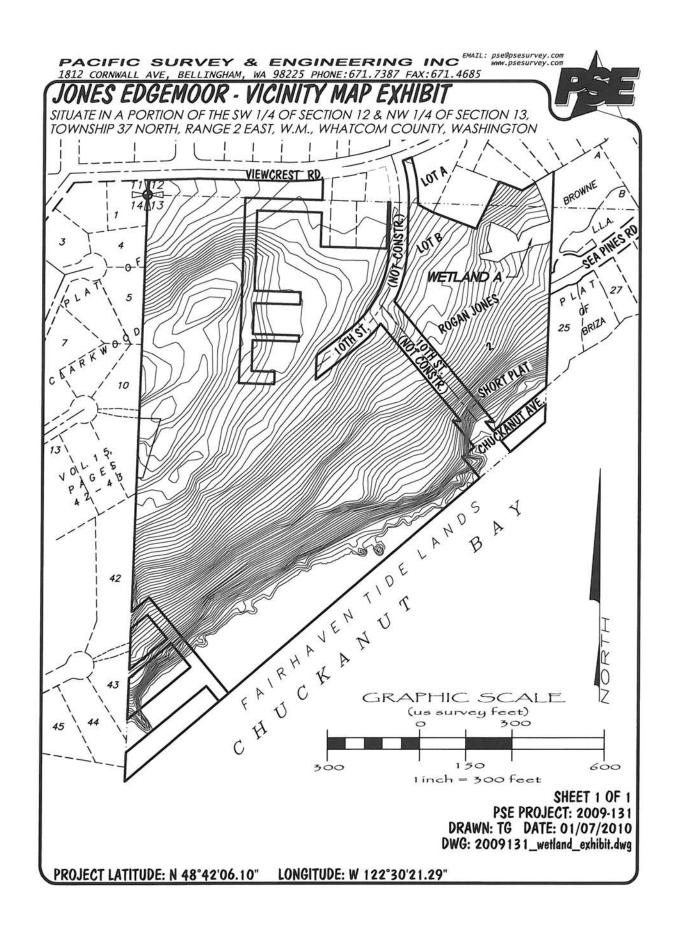
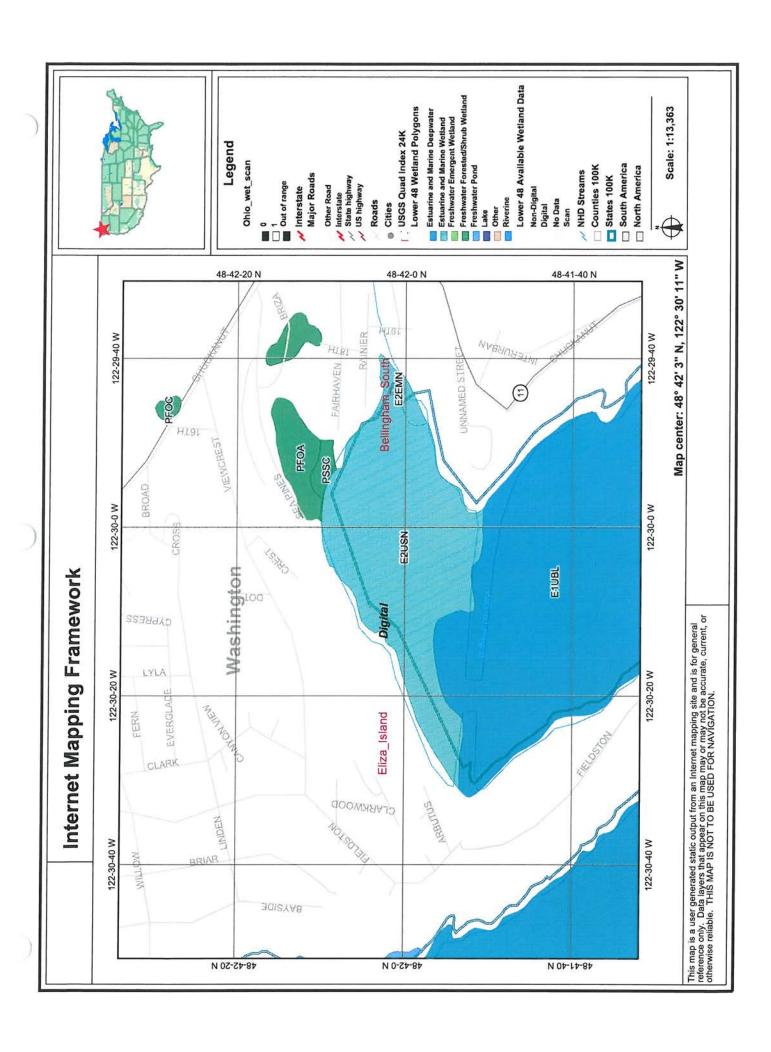


Figure 1. Location of the Jones Edgemoor property; property location, size, and shape are approximate.



WETLAND EXHIBIT SITUATE IN A PORTION OF THE SW 1/4 OF SECTION 12. NW 1/4 OF SECTION 13. TOWNSHIP 37 NORTH, RANGE 2 EAST, W.M., WHATCOM COUNTY, WASHINGTON GRAPHIC SCALE (us survey feet) 100 feet JONES EDGEMOOR PR DRAWN: TG DATE: 01/07/2010 N. LINE, NW 1/4, SECT. 13 PSE PROJECT: 2009-131 DWG: 2009131_wetland_exhibit.dwg SHEET 1 OF ON SHIP AS 000 APPROXIMATE LOCATION OF SEASONAL SEEP WETLAND A 091 2) WILLANDS DELIMEATED BY PACIFIC ECOLOGICAL CONSULTANTS IN DECEMBER 2009 AND SURVEYED BY PSE IN DECEMBER 2009. 3) HORIZONTAL DATUM. CITY OF BELLINGHAM (1973) BASIS OF BEARINGS: THE MONUMENTED CENTERLINE OF VIEWCREST ROAD PER ROS AF NO. 2080100076. 4) TOPOGRAPHIC & BOUNDARY MAPPING BY LEONARD, BOUDINOT & SKODJE, INC., DATED FEBRUARY 2006. 1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION IN DECEMBER OF 2009. *NOTE: ONLY PORTION OF PROPERTY CONTAINING WETLAND 'A' DEPICTED. 6 HOT CONSTRAIN (NOT CONSTR.) 0 30. 30 VIEWCREST RD. CALSHO DOMA 15 HO 7250 ELIZABETH, SUSAN, ROGAN JONES FAMILY LP SURVEY NOTES 30 (NOT CONSTR.) QUINAULT ST. FAIRHAVEN ST. (NOT CONSTR.) BAKER ST. (NOT CONSTR.) (NOT CONSTR.) SH STREET BETTINCHOW NO 88552 PHONE: 671.7387 FAX: 671.7685 1812 CORNWALL AVE, SURVEY DIAIDAG



48° 41' 49"

155, 58, 38,

USDA Natural Resources
Conservation Service

Meters 300

200

100

20

155, 30, 40,,

48° 41' 49"

Map Scale: 1:5,930 if printed on A size (8.5" x 11") sheet.

48* 42' 16"

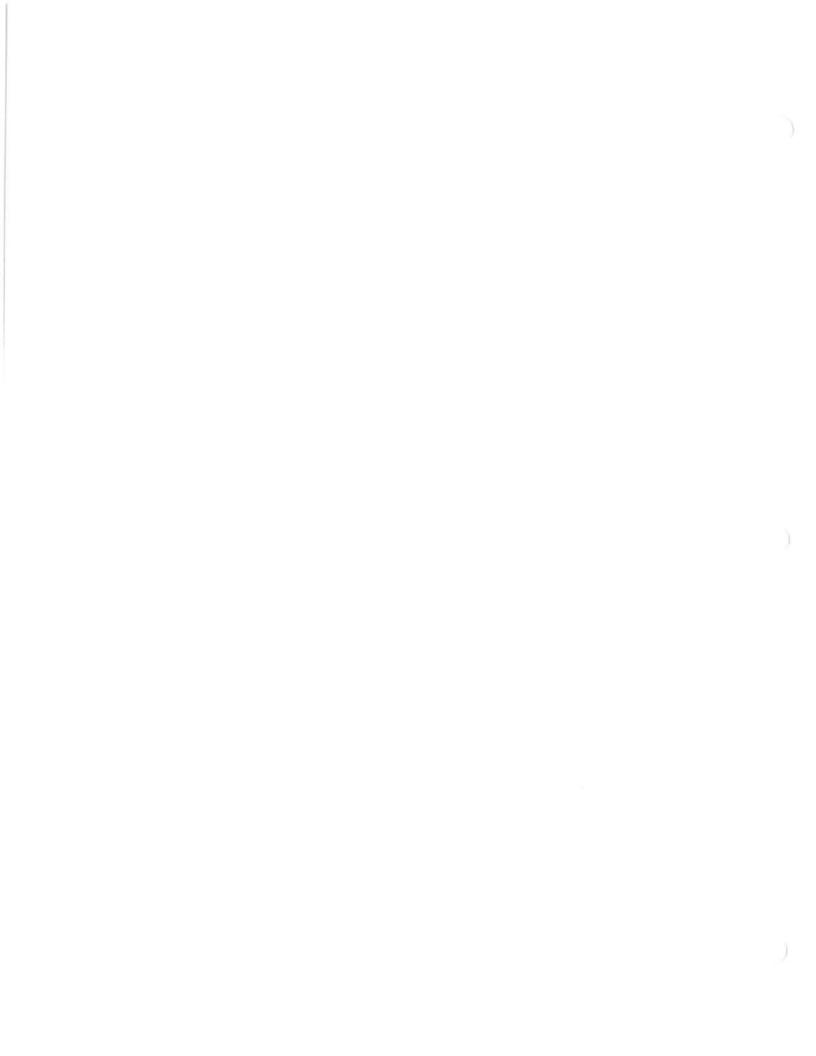
155, 59, 39..



48° 42' 16"

155. 30. 40..

APPENDIX A: WETLAND DETERMINATION DATA FORMS



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

Project Site:	Jones - E	dgemo	or						City/C	Count	y:	В	ellingh	nam		Sampl	ing Da	te:	4-0	ec-20	009
Applicant/Owner:	Jones											S	tate:	W	/A	Sampl	ing Po	int:	1		
Investigator(s):	E.Binney											Section	n, Tow	vnship	, Ran	ge: 13-	37N-2	E			
Landform (hillslope, te	rrace, etc.)	: sl	оре					Loc	al relief (co	ncav	e, con	vex, no	one):	nor	ne			Slop	e (%):	≥30	%
Subregion (LRR):	Α		Lat:		48	8-20)-10N		Long:			122	-30-2	5W		Datum:			NAD	83	
Soil Map Unit Name:	110-Nat	i loam,	30 to 60% slo	pes										NV	/I clas	sification	n:	NA			
Are climatic / hydrolog	ic condition	s on th	ne site typical f	or this	time	of y	ear?	Y	es :	X	No		(If r	no, exp	olain i	n Rema	rks.)				
Are Vegetation □,	Soil	□.	Or Hydrology	\Box .	sign	ifica	ntly di	sturbe	d? Are	e "No	ormal C	Circum	stance	es" pre	esent	>		Yes	X	No	
Are Vegetation □,	Soil	□.	Or Hydrology	□.	natu	rall	y probl	ematic	? (If	need	led, ex	plain a	any an	swers	in Re	marks.)	ĺ				
SUMMARY OF FIN	DINGS -	Attac	h site map s	show	ing s	am	pling	poin	t location	ıs, tı	ranse	cts, i	mpor	tant t	featu	res, et	c.				
Hydrophytic Vegetatio	n Present?			Y	es		No	X													77
Hydric Soil Present?				Y	es		No	X	Is the Sar	mpli	ng Are	a with	nin a V	Vetlan	ıd?			Yes		No	X
Wetland Hydrology Pre	esent?			Y	es		No	X													
Remarks: Parcel pro		Hv elor	nes of 30% or	areat	ar w/s	om	e low	er ner	cent areas	9											
Remarks. Parcer pro	edominam	uy sio	Jes 01 30 /6 01	great	ei wie	OII	ie iowe	n per	cent areas	58											
VEGETATION - Us	e scienti	fic na	mes of nlan	ite																	
Tree Stratum (Plot Siz	Serie v	du 12	mes or plan		olute		Domin	ant	Indicator	7. 19	Domin	anca '	Toet V	Vorke	hoot:						
		ilus)		% C	over		Specie	es?	Status		0 0			Carlos and							
1. Pseudotsuga men					35		yes		FACU		Numbe OBL, F.				ecies	That Are	1	0			(A)
2. Acer macrophyllu	m				15		yes		FACU												
3. Salix scouleriana					10		no		FAC		Fotal N All Stra		r of Do	ominar	nt Spe	cies Ac	ross	4			(B)
4. Taxus brevifolia					03		no		UPL	100											
	(D) (C)	7/26	w 20		63		= Tota	Cove	er.		Percent OBL, F				cies T	hat Are		0%			(A/B)
Sapling/Shrub Stratum		: 3m ra	idius)		- 1				-1011			10	6.1	-							
1. Gaultheria shallor	1				80		yes		FACU	33	Prevale										
2. Corylus cornuta					10		no		FACU				Total 9	% Cov	er of:			Contract Contract	oly by:		
3. Mahonia nervosa					10		no		FACU	-	OBL sp							x1 =			
4 Holodiscus discole					10		no		UPL		ACW		es					x2 =			
5. Rosa gymnocarpa)				03		no		FACU	200	AC sp							x3 =			
					113		= Tota	l Cove	r	F	ACU s	specie	S					x4 =			
Herb Stratum (Plot Siz	e: 1m X 1n	n)								t	JPL sp	ecies						x5 =			
1. Polystichum mun	itum				05		yes		FACU	(Column	Total	s:				(A)				(B)
2.														Preval	ence	Index =	B/A =				
3.										1	lydrop	hytic	Vege	tation	Indic	ators:					
4.										1	No	D	omina	nce Te	est is	>50%					
5.										1	NA.	Pi	revale	nce In	dex is	≤3.0 ¹					
6.																otations ¹	(Prov	ide sun	norting	n data	in
7.										1	NA.					parate s		iue sup	porting	y uata	ent:
8.											IA.	W	/etland	Non-	Vascu	ılar Plan	nts ¹				
9.										١,	IA	P,	roblem	atic H	lydron	hytic Ve	netati	on¹ (Ev	nlain)		
10.													ODICII	idilo i i	Julop	illy uo ve	gotati	UII (LA	piumi		
11.										1	Indicat	om of	hudrio	soil o	nd w	etland hy	drala	av musi	bo no	ocont	
3.02					05		= Total	Cove	r		inless						yarolog	y musi	be pr	esent	
Woody Vine Stratum (F	Plot Size: 3	m radi	us)		1222				0,	\vdash			74								
1.																					
2.										1											
						394	= Total	Cove													
0/ Dave Certiful in Hard	Ctrotur						- iotal	Cove	55		lydrop resen		Veget	tation	Ye		-	_	Me		
% Bare Ground in Herb	Jouatum										esen	. 1	_		16	70			No		Х
Remarks:																					

SOIL

Depth	Matrix				Redox Features				
(inches)	Color (moist)	%	Co	olor (M	oist) % Type	Loc ²	Texture	Remarks	
0-10	10YR 2/2 10YR 3/2	100					sandy lo sandy gravel	pam	
¹Type: C= Cc Hydric Soil I	oncentration, D=Deple Indicators: (Applicab	The second second		Carlo Abarbar	rix, CS=Covered or Coated S: otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6)	and Grains. ² Loc	loam		
	Histic (A3)				Loamy Mucky Mineral (F1)	(except MLRA 1)		Other (Explain in Remarks)	
	gen Sulfide (A4)				Loamy Gleyed Matrix (F2)	(oxoopemiliot)	_	Carlo (Explain in Francisco)	
	ed Below Dark Surface	e (A11)			Depleted Matrix (F3)				
	Dark Surface (A12)	V 17			Redox Dark Surface (F6)				
Parties and the second	Mucky Mineral (S1)				Depleted Dark Surface (F7)		3Indi	cators of hydrophytic vegetation and wetland	
	Gleyed Matrix (S4)				Redox Depressions (F8)		hydr	ology must be present, unless disturbed or lematic.	
7.55.0.5.0	ayer (if present):			- To	According to the state of the s		prob		
Туре:									
Depth (Inche	s):					Hydric Soils	Present?	Yes ☐ No	X
Remarks:	bedrock, sandstone,	@ 11"							
	drology Indicators:								
Primary Indic	ators (minimum of one	required	; check		Caracter A				
(NATA 1) (NATA 1)	e Water (A1)			all tha	(арріу)		Secon	dary Indicators (2 or more required)	
	Vater Table (A2)			all tha	Water-Stained Leaves (B9)			Nater-Stained Leaves (B9)	
☐ Satura	Non (A2)				Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and	d 4B)		Nater-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B)	
	and the second				Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11))	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10)	
	Marks (B1)			0	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13))	Water-Stained Leaves (B9) WILRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)	
☐ Sedime	Marks (B1) ent Deposits (B2)			0 0 0	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)) 1 1 2 2	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)	
☐ Sedimo	Marks (B1) ent Deposits (B2) eposits (B3)			0 0000	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon	g Living Roots (C		Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)	
☐ Sedimo	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)			0 0 0 0 0	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (g Living Roots (C C4)	(3) (3)	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)	
☐ Sedimo ☐ Drift Do ☐ Algal M ☐ Iron De	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)			0 00000	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (Recent Iron Reduction in Til	g Living Roots (C C4) led Soils (C6)	(3) (3) (5) (5) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)	
Sedimo	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6)	magery (f	B7)	0 000000	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (Recent Iron Reduction in Till Stunted or Stresses Plants (g Living Roots (C C4) led Soils (C6)	(c)	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)	
Sedimo Drift Do Algal M Iron Do Surface Inunda	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ttion Visible on Aerial In		112308/	0 00000	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (Recent Iron Reduction in Til	g Living Roots (C C4) led Soils (C6)	(c)	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)	
Sedimo Drift Do Algal M Iron Do Surface Inunda	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) etion Visible on Aerial In		112308/	0 000000	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (Recent Iron Reduction in Till Stunted or Stresses Plants (g Living Roots (C C4) led Soils (C6)	(c)	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)	
Sedimo Drift Do Algal M Iron Do Surfaco Inunda Sparse	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial In		112308/	0 000000	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (Recent Iron Reduction in Till Stunted or Stresses Plants (g Living Roots (C C4) led Soils (C6)	(c)	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)	
Sedimo Drift Do Algal M Iron Do Surfaco Inunda Sparse Field Observ	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial In ely Vegetated Concave vations: er Present? Yes	Surface	(B8)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alone Presence of Reduced Iron (C1) Recent Iron Reduction in Till Stunted or Stresses Plants (C1) Other (Explain in Remarks)	g Living Roots (C C4) led Soils (C6)	(c)	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)	
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Sedimu Drift Do Algal M Iron Do Surface Inunda Sparse Field Observ Surface Water Water Table F Saturation Pro (includes capi	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial In ely Vegetated Concave rations: er Present? Yes esent? Yes esent? Yes	Surface	No No No		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (Recent Iron Reduction in Til Stunted or Stresses Plants (Other (Explain in Remarks) Depth (inches): Depth (inches):	g Living Roots (C C4) led Soils (C6) D1) (LRR A)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)	x
Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Observ Surface Water Water Table F Saturation Pro (includes capi	Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial In ely Vegetated Concave rations: er Present? Yes esent? Yes esent? Yes	Surface	No No No		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alon Presence of Reduced Iron (I Recent Iron Reduction in Til Stunted or Stresses Plants (I Other (Explain in Remarks) Depth (inches): Depth (inches):	g Living Roots (C C4) led Soils (C6) D1) (LRR A)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)	×

Sampling Point: 1

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

Project Site: Jones - Edgemoor			City/Co		Sampling Date		Dec-20	009
Applicant/Owner: Jones				State: WA	Sampling Poin	nt: 2		
Investigator(s): E.Binney				Section, Township, Rang	je: 13-37N-2E	Į.		
Landform (hillslope, terrace, etc.): slope		Loc	al relief (con	cave, convex, none): none		Slope (%): ≥30	1%
Subregion (LRR): A Lat:	48-	20-10N	Long:	122-30-25W	Datum:	NAD	83	
Soil Map Unit Name: 110-Nati loam,, 30 to 60	% slopes			NWI class	sification: N	IA		
Are climatic / hydrologic conditions on the site typ	ical for this time of	year?	res X	No 🗌 (If no, explain in	n Remarks.)			
Are Vegetation □, Soil □, Or Hydro		cantly disturbe		"Normal Circumstances" present?		Yes X	No	
Are Vegetation ☐, Soil ☐, Or Hydro	logy □, natura	ally problemation	? (If n	eeded, explain any answers in Re	marks.)			
SUMMARY OF FINDINGS – Attach site m	nap showing sa	mpling poin	t locations	, transects, important featu	res, etc.			
Hydrophytic Vegetation Present?	Yes [] No X						
Hydric Soil Present?	Yes [No X	Is the Sam	pling Area within a Wetland?		Yes 🗌	No	X
Wetland Hydrology Present?	Yes [No X						
Remarks: Parcel predominantly slopes of 30	% or greater w/sc	me lower per	cent areas					
VEGETATION - Use scientific names of								
Tree Stratum (Plot Size: 10m radius)	% Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:				
1. Acer macrophyllum	50	yes	FACU	Number of Dominant Species T OBL, FACW, or FAC:	hat Are	0		(A)
2. Pseudotsuga menziesii	40	yes	FACU	OBL, FACW, OF FAC.				
3. Salix scouleriana	10	no	FAC	Total Number of Dominant Spe All Strata:	cies Across	6		(B)
4.	222			All Strata.				
Sapling/Shrub Stratum (Plot Size: 3m radius)	100	= Total Cove	er	Percent of Dominant Species T OBL, FACW, or FAC:	hat Are	0%		(A/B)
1. Holodiscus discolor	25	yes	UPL	Prevalence Index worksheet:				
2. Vaccinium parvifolium	10	yes	UPL	Total % Cover of:	1	Multiply by	4	
3. Gaultheria shallon	10	yes	FACU	OBL species	1 2	x1 =		
4.				FACW species	3	x2 =		
5.				FAC species	3	x3 =		
	45	= Total Cove	r	FACU species		x4 =		
Herb Stratum (Plot Size: 1m X 1m)				UPL species	9 00 00 00 00 00 00 00 00 00 00 00 00 00	x5 =		
1. Polystichum munitum	25	yes	FACU	Column Totals:	(A)		10	(B)
2.		UE 2001			Index = B/A =			
3.				Hydrophytic Vegetation Indic	ators:			
4.				No Dominance Test is				
5.				NA Prevalence Index is	-3 N1			
6.				Morphological Adap		la ausaadi.		1
7.				NA Remarks or on a se		e supportir	ig data	ın
8.				NA Wetland Non-Vascu	lar Plants ¹			
9.				NA Problematic Hydrop	hytic Vegetation	n ¹ (Evolain	¥/.	
10.				1 Toblemado Hydrop	nyao vogotation	(Explain)		
11.				¹ Indicators of hydric soil and we	tland hydrology	muet be n	recent	
	25	= Total Cove	r	unless disturbed or problematic		must be p	resent,	
Woody Vine Stratum (Plot Size: 3m radius)								
1.								
2.								
, T.		= Total Cover	r					
% Bare Ground in Herb Stratum 50		1010.0010.	:	Hydrophytic Vegetation Present? Ye	s 🗆] No		х
				110001111				
Remarks:								

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth
Color (moist) % Color (Moist) % Type¹ Loc² Texture Remarks 0-6 10YR 2/2 sandy loam 6-18+ 10YR 3/2 gravelly sand loam 1Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. 2Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: Histosol (A1) Sandy Redox (S5) Sandy Redox (S5) Red Parent Material (TF2)
0-6 10YR 2/2 sandy loam gravelly sand loam Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Red Parent Material (TF2)
6-18+ 10YR 3/2 Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1)
Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Sandy Redox (S5) Red Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: □ Histosol (A1) □ Sandy Redox (S5) □ 2 cm Muck (A10) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ Red Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: □ Histosol (A1) □ Sandy Redox (S5) □ 2 cm Muck (A10) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ Red Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: □ Histosol (A1) □ Sandy Redox (S5) □ 2 cm Muck (A10) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ Red Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: □ Histosol (A1) □ Sandy Redox (S5) □ 2 cm Muck (A10) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ Red Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: □ Histosol (A1) □ Sandy Redox (S5) □ 2 cm Muck (A10) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ Red Parent Material (TF2)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: □ Histosol (A1) □ Sandy Redox (S5) □ 2 cm Muck (A10) □ Histic Epipedon (A2) □ Stripped Matrix (S6) □ Red Parent Material (TF2)
☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ 2 cm Muck (A10) ☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Red Parent Material (TF2)
☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Red Parent Material (TF2)
and the second of the second o
Loamy wideky mineral (PT) (except with AT) Unter (Explain in Remarks)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6)
□ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) 3Indicators of hydrophytic vegetation and wetland
hydrology must be present, unless disturbed or
Restrictive Layer (if present):
Type:
Depth (Inches): Hydric Soils Present? Yes No
Remarks:
HYDROLOGY Wetland Hydrology Indicators:
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)
□ Surface Water (A1) □ Water-Stained Leaves (B9) □ Water-Stained Leaves (B9)
High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B)
☐ Saturation (A3) ☐ Salt Crust (B11) ☐ Drainage Patterns (B10)
☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13) ☐ Dry-Season Water Table (C2)
☐ Sediment Deposits (B2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Geomorphic Position (D2)
☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4) ☐ Shallow Aquitard (D3)
☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ FAC-Neutral Test (D5)
프로그램 가입니다 하다 나오는 그는 그는 그를 가입니다면 하는데 보고 있다면 하다 하는데 그는 그런 그렇게 하는데 사람이 되었다.
☐ Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Raised Ant Mounds (D6) (LRR A)
프로그램에서 가게 있어요? 그런 그래도 그래도 그래도 그래면 가게 되었다면 가게 되었다면 하는데 그는 그들은 그렇게 되었다면 하는데 하는데 하는데 그는 그리고 있다면 하는데
☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D7)
☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D7) ☐ Sparsely Vegetated Concave Surface (B8)
☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D7) ☐ Sparsely Vegetated Concave Surface (B8) Field Observations:
□ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No X Depth (inches):
□ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No X Depth (inches): Water Table Present? Yes □ No X Depth (inches): Saturation Present? Yes □ No X Depth (inches): Wetland Hydrology Present? Yes □ No
☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D7) ☐ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ☐ No X Depth (inches): Water Table Present? Yes ☐ No X Depth (inches):
□ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No X Depth (inches): Water Table Present? Yes □ No X Depth (inches): Saturation Present? Yes □ No X Depth (inches): Wetland Hydrology Present? Yes □ No No
Inundation Visible on Aerial Imagery (B7)

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

Project Site: Jones - Edgemoor					City/Co	unty:	Bellingh		Sampling Da		0.50.50	ec-20	09
Applicant/Owner: Jones						100	State:	WA	Sampling Po		3		
Investigator(s): E.Binney								nship, Ran	ge: 13-37N-2				
Landform (hillslope, terrace, etc.): slope				Loca	I relief (cond	cave, conve	ex, none):	none			e (%):		%
Subregion (LRR): A Lat:		-20-1	10N		Long:		122-30-25	SW .	Datum:		NAD 8	33	
Soil Map Unit Name: 110-Nati loam,, 30 to 60% slop	es							NWI clas	sification:	NA			
Are climatic / hydrologic conditions on the site typical for	this time of	f yea	ar?	Ye	es X	No	☐ (If n	o, explain i	n Remarks.)				
Are Vegetation ☐, Soil ☐, Or Hydrology	☐, signif	icant	tly distu	urbed	? Are	"Normal Ci	rcumstance	s" present	?	Yes	X	No	
Are Vegetation □, Soil □, Or Hydrology	☐, natur	ally p	oroblen	natic?	? (If ne	eeded, exp	lain any ans	swers in Re	emarks.)				
SUMMARY OF FINDINGS – Attach site map sh	nowing sa	ımp	ling p	oint	locations	, transec	ts, import	ant featu	res, etc.				
Hydrophytic Vegetation Present?	Yes []	No 2	x									
Hydric Soil Present?	Yes [No 2	x	Is the Sam	pling Area	within a W	letland?		Yes		No	X
Wetland Hydrology Present?	Yes []	No 2	x									
Remarks: Parcel predominantly slopes of 30% or g	reater w/sc	ome	lower	perc	ent areas.	Plot on to	p of cliff ald	ong shore	ine within rel	atively	level a	rea.	

VEGETATION - Use scientific names of plants					1-3								
Tree Stratum (Plot Size: 10m radius)	Absolute % Cover		ominar pecies		Indicator Status	Domina	nce Test W	orksheet:					
1. Pseudotsuga menziesii	85	ye	es		FACU	Number	of Dominan	t Species	That Are	0			(4)
2. Arbutus menziesii	10	no	0		UPL	OBL, FA	CW, or FAC	C:		U			(A)
3.						Total Nu	mber of Do	minant Spe	ecies Across	4			(B)
4.						All Strata	a:			0.50			(0)
Sapling/Shrub Stratum (Plot Size: 3m radius)	95	=	Total C	Cover			of Dominan CW, or FAC		That Are	0%			(A/B)
1. Gaultheria shallon	90	ye	es		FACU	Prevale	nce Index v	worksheet	:				
2. Holodiscus discolor	10	no	0		UPL		Total %	Cover of:		Multip	ly by:		
3. Amelanchier ainifolia	10	no	0		FACU	OBL spe	ecies			x1 =			
4.						FACW s	pecies			x2 =			
5.						FAC spe	cies			×3 =			
	110	=	Total C	Cover		FACU sp	pecies			x4 =			
Herb Stratum (Plot Size: 1m X 1m)						UPL spe				x5 =			
1. Pteridium aquilinum	10	ye	es		FACU	Column	Totals		(A)			(B)
2. Rubus ursinus	05	ye			FACU	Column		Prevalence	Index = B/A =				T.4.
3.	.55	,,,			17.00	Hydroni	nytic Veget	ALM PROPERTY.	142.000.1255.1.000.000.00	24			
4.						No		nce Test is					
						15000			181				
5.						NA		nce Index is	100000 A0000				
6.						NA	Morpholo	ogical Ada	otations ¹ (Proveparate sheet)	ide sup	porting	data	in
7.						NA			ular Plants ¹				
8.						NA NA							
9.						NA	Problem	atic Hydror	ohytic Vegetat	on' (Ex	plain)		
10.													
11.							rs of hydric sturbed or p		etland hydrolo	gy must	be pre	esent,	
	15	=	Total C	cover		uniess u	sturbed or j	probleman	•				
Woody Vine Stratum (Plot Size: 3m radius)													
1.													
2.													
		=	Total C	over			ytic Vegeta	ation		90			
% Bare Ground in Herb Stratum 25						Present'			es		No		X
Remarks:													

SOIL

Prof	ile Descri	ption: (Describ	e to th	e depth	need	ed to d	locumen	t the indic	ator or conf	firm the ab	sence c	f indic	ators.)						
0	epth	Matr	ix					Redox Fe	ENTOLUSIAN											
	nes)	Color (moist)		%	C	olor (Mo	oist)	- %	Type ¹	Loc		Textu				Rer	marks	S		
)-3.5	NA										du								
3	3.5-8	2.5Y 5/1		100								silty I	oam							
8	-20+	10YR 3/4										silty I	oam	bed ro	ck deepe	r than	20"			
1								53			V	DI 5								
-		centration, D=D	-	200	555			GE 29595	Soated Sand	Grains.	Location	2000	V25 2/02	100 P. CO.	5454 854	a Lived	nia C	-it-3.		
1000		dicators: (Appl	icable	to all Lr	kks, t	ınıess									oblematio	спуа	nc 3	ons :	1	
	Histosol	Yana Hab						Redox (S5)						cm Muck	t Material	/TE2	1			
	************	ipedon (A2)					SOUTH	d Matrix (S Mucky Min	eral (F1) (e)	cont MI P	11)				olain in Re	estancia.	10.			
	Black His	Sulfide (A4)					X000X00 TE	Gleyed Ma	Contractivity I and contract	ccept with	\ 1)			mei (Ext	nam m Ke	illain	5)			
	22 480 275 4138 010	Below Dark Su	rface /	۸11)			300000000000000000000000000000000000000	ed Matrix (F												
		rk Surface (A12		111)			A 60.	Dark Surfa												
								ed Dark Su				3In	dicato	rs of hydr	rophytic v	egeta	tion a	and w	etland	
	VII	ucky Mineral (S eyed Matrix (S4						Depression				hy	drolog	y must be	present,					
	es-divisions, but	yer (if present)	9.5				IVEGOX	Бергеззіої	15 (1 0)			pro	oblema	itic.						
Туре		yer (ii present)																		
- 200 m	h (Inches):									Hydric Sc	oils Pre	sent?			Yes	Г		No		X
Rema																				
HYD	ROLOG	Υ																		
Wetla	and Hydro	logy Indicator	s:																	
Prima	ary Indicate	ors (minimum o	f one re	equired;	check	all that	apply)					Seco	ondary	Indicator	rs (2 or m	ore re	quire	d)		
	Surface \	Nater (A1)					Water-S	Stained Lea	ives (B9)				Wate	r-Stained	Leaves	(B9)				
	High Wa	ter Table (A2)					(except	MLRA 1,	2, 4A, and 4	B)			(MLF	RA 1, 2, 4	A, and 4	B)				
	Saturatio	n (A3)					Salt Cru	ıst (B11)					Drain	age Patt	erns (B10)				
	Water Ma	arks (B1)					Aquatic	Invertebra	tes (B13)				Dry-S	Season V	Vater Tabl	e (C2)			
	Sedimen	t Deposits (B2)					Hydroge	en Sulfide (Odor (C1)				Satur	ration Vis	ible on A	erial In	nage	ry (C	3)	
	Drift Dep	osits (B3)					Oxidize	d Rhizosph	eres along l	iving Roots	(C3)		Geon	norphic P	osition (D)2)				
	Algal Ma	t or Crust (B4)					Present	e of Reduc	ced Iron (C4)			Shall	ow Aquita	ard (D3)					
	Iron Dep	osits (B5)					Recent	Iron Reduc	tion in Tilled	Soils (C6)			FAC-	Neutral T	est (D5)					
	Surface S	Soil Cracks (B6))				Stunted	or Stresse	s Plants (D1) (LRR A)			Raise	ed Ant Mo	ounds (De) (LR	RA)			
	Inundatio	n Visible on Ae	rial Ima	gery (B7	7)		Other (E	Explain in R	(emarks)				Frost	-Heave H	lummock	s (D7))			
	Sparsely	Vegetated Con	cave S	urface (E	38)															
Field	Observat	ions:																		
Surfa	ce Water F	Present?	Yes		No	X	Dep	oth (inches)):											
Water	r Table Pre	esent?	Yes		No	X	599	oth (inches)												
	ation Pres	ent?	V	02-02	Ma		Don	th (inches)	in the second		Watla	nd Hyd	Irology	y Presen	+2	Yes			No	X
-	des capilla	ry fringe)	Yes		No	Х	- 0	oth (inches)	777		Nev -	iu riyu	liology	riesen		168	-	Ц_	140	^
Descr	ibe Reco	ded Data (strea	am gau	ge, moni	itoring	well, a	erial pho	tos, previou	is inspection	ns), if availa	ble:									
Rema	irks:																			

Sampling Point: 3

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

Project Site:	Jones - Edge	emoor					City/Co	unty:	Bellingl	ham	Sampling [Date:	4-D	ec-20	09
Applicant/Owner:	Jones						35	20	State:	WA	Sampling F	Point:	4		
Investigator(s):	E.Binney							s	ection, Tov	vnship, Ran	ige: 13-37N	I-2E			
Landform (hillslope, te	rrace, etc.):	slope				Loca	al relief (con	cave, conv	ex, none):	none		Slop	e (%):	≥30	%
Subregion (LRR):	Α	Lat:	4	18-20)-10N		Long:		122-30-2	5W	Datum:		NAD 8	33	
Soil Map Unit Name:	110-Nati loa	am,, 30 to 60% slop	es							NWI clas	ssification:	NA			
Are climatic / hydrolog	ic conditions o	n the site typical fo	r this time	of y	ear?	Y	'es X	No	☐ (If i	no, explain	in Remarks.)	0			
Are Vegetation .	Soil 🔲	Or Hydrology	☐, sig	nifica	ntly dis	sturbed	d? Are	"Normal Ci	ircumstano	es" present	?	Yes	X	No	
Are Vegetation ,	Soil 🔲	Or Hydrology	□, nat	urall	y proble	ematic	? (If n	eeded, exp	olain any ar	swers in R	emarks.)				
SUMMARY OF FIN	DINGS - At	tach site map sl	nowing	sam	pling	point	tlocations	, transec	ts, impor	tant featu	ıres, etc.				
Hydrophytic Vegetatio	n Present?		Yes		No	X									
Hydric Soil Present?			Yes		No	X	Is the Sam	pling Area	within a \	Netland?		Yes		No	X
Wetland Hydrology Pro	esent?		Yes		No	X									
Remarks: Parcel pr	edominantly :	slopes of 30% or g	reater w	som	e lowe	er perc	ent areas.	Plot on hil	llslope, we	st of Plot	3.				
VEGETATION - Us	e scientific	names of plants									_				
Tree Stratum (Plot Siz	e: 10m radius	;)	Absolute % Cover		Domin Specie		Indicator Status	Domina	ince Test V	Worksheet:					
1. Pseudotsuga men	ziesii		7	72) · · ·	yes		FACU	Number	of Domina	nt Species	That Are	•			/A1
2. Arbutus menziesi	i		2	0	no		UPL	OBL, FA	ACW, or FA	C:		0			(A)
3. Prunus emarginat	a		1	0	no		FACU	Total Nu	mber of Do	ominant Sp	ecies Across	5			(B)
4. Salix scouleriana			1	0	no		FAC	All Strata	a:						(6)
			11	0	= Tota	I Cove	r			nt Species	That Are	0%			(A/B)
Sapling/Shrub Stratum	(Plot Size: 3r	n radius)						OBL, FA	ACW, or FA	C:		070			(~0)
1. Mahonia nervosa			5	5	yes		FACU	Prevale	nce Index	worksheet	:				
2. Holodiscus discol	or		3	0	yes		UPL		Total 9	% Cover of:		Multip	ly by:		
3. Rosa gymnocarpa	i		0	5	no		FACU	OBL spe	ecies			x1 =			
4.								FACW s	ā _{re}			x2 =			
5.								FAC spe	ecies			x3 =			
			9	0	= Tota	Cove	r	FACU s	pecies			×4 =			
Herb Stratum (Plot Siz	e: 1m X 1m)							UPL spe	ecies			x5 =			
1. Polystichum mun	itum		2	0	yes		FACU	Column	Totals:		(A)			((B)
2. Rubus ursinus			0	5	yes		FACU		7	Prevalence	Index = B/A	=			
3.								Hydroph	hytic Vege	tation Indi	cators:				
4.								No	Domina	nce Test is	>50%				
5.								NA	Prevale	nce Index i	s ≤3.0 ¹				
6.								NA	Morpho	logical Ada	ptations ¹ (Pro	ovide sup	porting	data	in
7.								NA	Remark	s or on a se	eparate shee	t)			
8.								NA	Wetland	d Non-Vasc	ular Plants ¹				
9.								NA	Problem	natic Hydro	phytic Vegeta	ation ¹ (Exp	plain)		
10.															
11.								1Indicato	rs of hydric	soil and w	etland hydrol	ogy must	be pre	sent,	
			2	5	= Total	Cover		unless di	isturbed or	problemati	C.				
Woody Vine Stratum (F	Plot Size: 3m r	adius)													
1.															
2.															
					= Total	Cover	-	Hydroph	nytic Vege	tation					
% Bare Ground in Herb	Stratum 20							Present			es		No		X
Remarks:															

							Sampling Poin	L4		
Profile Descr	iption: (Describe to	the depth	needed to	document the indicator or	confirm the absenc	e of indicators.)				
Depth	Matrix			Redox Features						
(inches)	Color (moist)	%	Color (M	loist) % Typ	pe ¹ Loc ²	Texture		Remarks	S	
0-1	NA					duff				
1-20+	10YR 2/2	100				sandy loam				
Type: C= Cor	ncentration, D=Deple	tion, RM=R	Reduced Mat	trix, CS=Covered or Coated S	Sand Grains. ² Loca	tion: PL=Pore Lin	ing, M=Matrix			
lydric Soil In	dicators: (Applicab	le to all LR	Rs, unless	otherwise noted.)		Indicator	s for Problematic	Hydric S	oils³:	
Histosol	(A1)			Sandy Redox (S5)		□ 2 0	cm Muck (A10)			
Histic Ep	oipedon (A2)			Stripped Matrix (S6)		☐ Re	ed Parent Material ((TF2)		
Black Hi	stic (A3)			Loamy Mucky Mineral (F1) (except MLRA 1)	☐ Ot	her (Explain in Ren	narks)		
Hydroge	n Sulfide (A4)			Loamy Gleyed Matrix (F2)						
Depleted	d Below Dark Surface	(A11)		Depleted Matrix (F3)						
Thick Da	ark Surface (A12)			Redox Dark Surface (F6)		1990				
☐ Sandy M	lucky Mineral (S1)			Depleted Dark Surface (F	7)		s of hydrophytic ve			
] Sandy G	leyed Matrix (S4)			Redox Depressions (F8)		hydrology problemat	must be present, utic.	ınless dis	turbed or	
estrictive La	yer (if present):					P. S.				
уре:										
epth (Inches)	:				Hydric Soils F	Present?	Yes		No	X
	v									
Remarks: HYDROLOG Wetland Hydr	Contract Con									
IYDROLOG Vetland Hydro	ology Indicators:	required: c	check all tha	it apply)		Secondary	Indicators (2 or mo	re require	ed)	
IYDROLOG Vetland Hydro rimary Indicat	ology Indicators: tors (minimum of one	required; c	11000	This is a second of the second	0)	1940 C. T. C.	Indicators (2 or mo r-Stained Leaves (6	enna -	ed)	
YDROLOG letland Hydr rimary Indicat	ology Indicators: tors (minimum of one Water (A1)	required; c	check all tha	Water-Stained Leaves (B9		☐ Water	r-Stained Leaves (E	39)	ed)	
YDROLOG letland Hydro rimary Indicat] Surface] High Wa	ology Indicators: tors (minimum of one Water (A1) ater Table (A2)	required; c		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a		☐ Water	r-Stained Leaves (E A 1, 2, 4A, and 4B	39)	ed)	
YDROLOG fetland Hydro rimary Indicat Surface High Wa Saturatio	ology Indicators: lors (minimum of one Water (A1) ater Table (A2) on (A3)	required; c		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a Salt Crust (B11)	nd 4B)	☐ Water (MLR) ☐ Drains	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10)	39))	ed)	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatic Water M	ology Indicators: lors (minimum of one Water (A1) ater Table (A2) on (A3) larks (B1)	required; c		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrates (B13	nd 4B)	☐ Water (MLR: ☐ Draina ☐ Dry-S:	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table	39)) (C2)	•	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer	ology Indicators: tors (minimum of one Water (A1) ster Table (A2) on (A3) larks (B1) nt Deposits (B2)	required; c	0	Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (C	nd 4B) 3) 1)	☐ Water (MLR. ☐ Draina ☐ Dry-S: ☐ Satura	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer	(C2)	•	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep	ology Indicators: tors (minimum of one Water (A1) tter Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	required; c		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (C Oxidized Rhizospheres alc	nd 4B) 3) 1) ong Living Roots (C3		r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer orphic Position (D2	(C2)	•	
IYDROLOG Vetland Hydrorimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) at Deposits (B2) cosits (B3) at or Crust (B4)	required; c		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, at Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (CO) Oxidized Rhizospheres also Presence of Reduced Iron	nd 4B) 3) 1) ong Living Roots (C3 (C4)		r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3)	(C2)	•	
IYDROLOG Vetland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	required; c		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (C) Oxidized Rhizospheres ald Presence of Reduced Iron Recent Iron Reduction in T	nd 4B) 3) 1) ong Living Roots (C3 (C4) Filled Soils (C6)		r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer orphic Position (D2 ow Aquitard (D3)	(C2) ial Image	ry (C9)	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)	**		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (COXIdized Rhizospheres ald Presence of Reduced Iron Recent Iron Reduction in T Stunted or Stresses Plants	nd 4B) 3) 11) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A)	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raiser	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6)	(C2) ital Image	ry (C9)	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial In	magery (B7		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (C) Oxidized Rhizospheres ald Presence of Reduced Iron Recent Iron Reduction in T	nd 4B) 3) 11) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A)	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raiser	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer orphic Position (D2 ow Aquitard (D3)	(C2) ital Image	ry (C9)	
YDROLOG [etland Hydrorimary Indicate] Surface] High Wa] Saturatio] Water M] Sedimer] Drift Dep [Algal Ma] Iron Dep [Surface] Inundatio] Sparsely	ology Indicators: tors (minimum of one Water (A1) tter Table (A2) on (A3) tarks (B1) on Deposits (B2) torsits (B3) tt or Crust (B4) torsits (B5) Soil Cracks (B6) on Visible on Aerial In	magery (B7		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (COxidized Rhizospheres ald Presence of Reduced Iron Recent Iron Reduction in T Stunted or Stresses Plants	nd 4B) 3) 11) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A)	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raiser	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6)	(C2) ital Image	ry (C9)	
YDROLOG etland Hydro imary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) th Deposits (B2) toosits (B3) at or Crust (B4) toosits (B5) Soil Cracks (B6) on Visible on Aerial In the Vegetated Concave	magery (B7 Surface (B		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (C) Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T Stunted or Stresses Plants Other (Explain in Remarks)	nd 4B) 3) 1) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A)	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raiser	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6)	(C2) ital Image	ry (C9)	
YDROLOG fetland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely eld Observat	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) at Deposits (B2) torsits (B3) at or Crust (B4) torsits (B5) Soil Cracks (B6) on Visible on Aerial In tyegetated Concave tions: Present? Yes	magery (B7 Surface (B		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (C) Oxidized Rhizospheres ald Presence of Reduced Iron Recent Iron Reduction in T Stunted or Stresses Plants Other (Explain in Remarks	nd 4B) 3) 1) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A)	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raiser	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6)	(C2) ital Image	ry (C9)	
Surface Sedimer Drift Dep Algal Ma Iron Dep Iron Dep Iron Dep	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) on to Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial In r Vegetated Concave tions: Present? Yes esent? Yes	magery (B7 Surface (B		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (C) Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in T Stunted or Stresses Plants Other (Explain in Remarks)	nd 4B) 3) 11) ong Living Roots (C3 (C4) Filled Soils (C6) 6 (D1) (LRR A)	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raiser	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) Heave Hummocks	(C2) ital Image	ry (C9)	×
IYDROLOG Vetland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely ield Observat urface Water Vater Table Pr aturation Pres includes capilla	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) on to Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial In a Vegetated Concave tions: Present? Yes esent? Yes ary fringe)	magery (B7 Surface (B		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13 Hydrogen Sulfide Odor (COxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in To Stunted or Stresses Plants Other (Explain in Remarks) Depth (inches): Depth (inches):	nd 4B) 3) 11) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A) (We	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura) ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raisee	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) Heave Hummocks	(C2) (C2) ial Image (CRR A) (D7)	ry (C9)	x
WDROLOG Vetland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely veld Observat varface Water Vater Table Pr aturation Pres roludes capilla escribe Reco	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) on to Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial In a Vegetated Concave tions: Present? Yes esent? Yes ary fringe)	magery (B7 Surface (B		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C) Oxidized Rhizospheres ald Presence of Reduced Iron Recent Iron Reduction in T Stunted or Stresses Plants Other (Explain in Remarks Depth (inches): Depth (inches):	nd 4B) 3) 11) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A) (We	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura) ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raisee	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) Heave Hummocks	(C2) (C2) ial Image (CRR A) (D7)	ry (C9)	x
YDROLOG // Jetland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Juff Dep Algal Ma Iron Dep Surface Inundatio Sparsely eld Observat urface Water fater Table Presidudes capilla	ology Indicators: tors (minimum of one Water (A1) ater Table (A2) on (A3) tarks (B1) on to Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial In a Vegetated Concave tions: Present? Yes esent? Yes ary fringe)	magery (B7 Surface (B		Water-Stained Leaves (B9 (except MLRA 1, 2, 4A, a) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C) Oxidized Rhizospheres ald Presence of Reduced Iron Recent Iron Reduction in T Stunted or Stresses Plants Other (Explain in Remarks Depth (inches): Depth (inches):	nd 4B) 3) 11) ong Living Roots (C3 (C4) Filled Soils (C6) 5 (D1) (LRR A) (We	☐ Water (MLR. ☐ Draina ☐ Dry-Si ☐ Satura) ☐ Geom ☐ Shallo ☐ FAC-N ☐ Raisee	r-Stained Leaves (E A 1, 2, 4A, and 4B age Patterns (B10) eason Water Table ation Visible on Aer corphic Position (D2 ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6) Heave Hummocks	(C2) ital Image (LRR A) (D7)	ry (C9)	x

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

										or Michigan						
Project Site:	Jones - Edg	gemoor					City/Co	unty:	Bellingh	nam	S	ampling Da	ate:	4-D	ec-20	09
Applicant/Owner:	Jones								State:	WA	S	ampling Po	oint:	5		
Investigator(s):	E.Binney							Se	ction, Tow	vnship, R	Range:	13-37N-	2E			
Landform (hillslope, ter	rrace, etc.):	slope				Loca	al relief (cond	cave, conve	x, none):	none			Slop	e (%):	≥30	%
Subregion (LRR):	Α	Lat:		48-20	0-10N		Long:		122-30-2	5W	Da	itum:		NAD 8	33	
Soil Map Unit Name:	110-Nati le	oam,, 30 to 60% slo	pes							NWI c	classifi	cation:	NA			
Are climatic / hydrologi	ic conditions	on the site typical fo	or this time	e of y	ear?	Y	es X	No	☐ (If r	no, expla	in in R	temarks.)				
Are Vegetation □,	Soil [], Or Hydrology	☐, sig	nifica	antly di	sturbed	d? Are	"Normal Circ	cumstance	es" prese	ent?		Yes	X	No	
Are Vegetation □,	Soil [], Or Hydrology	□, na	turall	y probl	ematic	? (If n	eeded, expla	ain any an	swers in	Rema	arks.)				
SUMMARY OF FIN	DINGS - A	ttach site map s	howing		pling		locations	, transects	s, impor	tant fea	atures	s, etc.				
Hydrophytic Vegetation	Present?		Yes		No	X										
Hydric Soil Present?			Yes		No	X	Is the Sam	pling Area v	within a V	Vetland1	?		Yes		No	X
Wetland Hydrology Pre	esent?		Yes		No	Х				0						
	edominantly	slopes of 30% or	greater w	//som	ne low	er perc	ent areas.	Plot near to	p of hill v	within/bo	owl po	ssible old	i/historic	qua	ry/ba	rrow
pit.																
				-												
VEGETATION - Us	e scientifi	c names of plant			_											
Tree Stratum (Plot Size	e: 10m radiu	is)	Absolut % Cove		Domin		Indicator Status	Dominan	ice Test V	Vorkshe	et:					
1. Alnus rubra			Carles Carles	25	yes		FAC	Number o	of Domina	nt Specie	es Tha	it Are				***
2. Acer macrophyllui	m		2	20	yes		FACU	OBL, FAC					2			(A)
3. Betula papyrifera			2	20	yes		FAC	Total Num	nber of Do	minant S	Specie	s Across	•			(D)
4. Pseudotsuga men	ziesii		2	20	yes		FACU	All Strata:					6			(B)
			8	35	= Tota	I Cove	r	Percent of	f Dominar	nt Specie	s Tha	t Are	33%			(A/D)
Sapling/Shrub Stratum	(Plot Size: 3	lm radius)						OBL, FAC	CW, or FA	C:			3376			(A/B)
1. Holodiscus discole	or		4	45	yes		UPL	Prevalen	ce Index	workshe	eet:					
2.									Total 9	6 Cover	of:		Multipl	y by:		
3.								OBL spec	ies				x1 =			
4.								FACW sp	ecies				x2 =			
5.								FAC spec	ies				x3 =			
					= Tota	l Cover	r	FACU spe	ecies				x4 =			
Herb Stratum (Plot Size	e: 1m X 1m)							UPL spec	ies				x5 =			
1. Polystichum muni			5	55	yes		FACU	Column To	otale:			(A)				B)
2. Carex hendersonia					no		FAC	Column		Prevalen	ce Ind	ex = B/A =				-,
3. Rubus ursinus				92	no		FACU	Hydrophy	SWALL SOLL I	0.00	1000 14					
4.					110		17.00	No	14 _{0.00} - 374	nce Test						
5.								NA				3353 3154				
6.								, wa		nce Inde			220	4		
7.								NA	Remark	logical Ai s or on a	daptat sepai	ions ¹ (Prov	vide supp	orting	data	ın
8.								NA NA	Wetland	l Non-Va	ecular	Plante ¹				
9.								NA NA					1 re			
								INA.	Problem	iatic Hyd	ropny	tic Vegetat	ion (Exp	lain)		
10.										12/ 12	1000	227 2 2	50	Z.	- 12	
11.			7	0	- Total	l Cover		¹ Indicators unless dis	s of hydric turbed or	soil and problema	wetla	nd hydrolo	gy must	be pre	sent,	
Woody Vine Stratum (P	lot Siza: 2-	radius)			TOTAL	Cover		520000000000						-	_	
	101 3126, 3111	raulus)														
1.																
2.				150	= Tate!	l Ca:	es .									
0/ Boro Crowned in Line	Ctratum 45				- rotal	l Cover		Hydrophy		ation	V		~	No.		
% Bare Ground in Herb	otratum 10							Present?			Yes		Х	No		
Remarks:																

SOIL

Depth Matrix							Redox F	eatures										
(inches) Color (moist) % Color (Moist) %							Type ¹	Loc	2	Textur	е		1	Remark	s			
05	5 NA	· -									duf	f						
.5-12	2+ 10YR	3/2	100								sandy l	oam	bedrock w	/in 16*				
¹ Type: (C= Concentration	D=Denleti	on RM=	Reduc	ed Mat	rix CS=C	overed or	Coated San	d Grains 2	Locatio	n PI =P	ore Lin	ing M=Matr	rix				
	Soil Indicators:							oodica ouii	a Oramo.	Locatio		-	s for Proble		lydric 9	Soils ³ .		-
	istosol (A1)	(Аррисави	to an L	inito, t			Redox (S5	V					m Muck (A		iyano (ions .		
	istic Epipedon (A	2)				100110000000000000000000000000000000000	Matrix (S	7.00					d Parent Ma		F2)			
_		2)						neral (F1) (e x	roont MI D	۸ ۱۱				215-214-0-0-0-0- <u>0</u>				
	lack Histic (A3)	A 4)							kcept wilk	1)		Ot	her (Explain	III Kelli	aiks)			
	ydrogen Sulfide (/A 4 4\				Gleyed Ma											
	epleted Below Da		(A11)				d Matrix (I	VIA TO THE STATE OF THE STATE O										
	hick Dark Surface	- Consession					Dark Surfa				3 _{lnc}	licator	s of hydroph	vtic veg	atation	and wet	hne	
7200 F 100	andy Mucky Mine							rface (F7)					must be pre					
3150 30507	andy Gleyed Mat	- 100-11				Redox	Depression	ns (F8)	1		pro	blemat	ic.					
1113	tive Layer (if pre	sent):																
Type:									TESTS - CONTRACTOR	122 250	3525			4.17	122.20	025		
Depth (I	nches):								Hydric S	oils Pre	esent?			Yes		No	- 3	×
Remark	s:																	
UVDD	OL OCY																	
AUGUST WITH THE	OLOGY d Hydrology Indi	catore:																
			roquired	chack	all tha	t apply)					Seco	ndanı	Indicators (2	or more	e requir	ed)		
CARLOT SA	Indicators (minim		required	, CHECK	0/2-20	120 May 0		(DO)		-	-	A 200 / 1/1	25 Oct. 4045	09-000	207	su/		
	urface Water (A1						tained Lea		·D)				-Stained Le		, (E)			
	igh Water Table	(A2)			-			2, 4A, and 4	IB)		_		A 1, 2, 4A, a	UNIBERRY				
100	aturation (A3)						st (B11)	27726					age Patterns		200			
	Vater Marks (B1)					Aquatic	Invertebra	tes (B13)					eason Wate					
□ s	ediment Deposits	(B2)				Hydroge	n Sulfide	Odor (C1)				Satura	ation Visible	on Aeria	al Image	ery (C9)		
	rift Deposits (B3)					Oxidized	Rhizosph	neres along l	Living Roots	s (C3)		Geom	orphic Posit	tion (D2)				
□ A	lgal Mat or Crust	(B4)				Presenc	e of Redu	ced Iron (C4	-)			Shallo	w Aquitard	(D3)				
☐ Ire	on Deposits (B5)					Recent I	ron Reduc	ction in Tilled	Soils (C6)			FAC-N	leutral Test	(D5)				
☐ S	urface Soil Crack	s (B6)				Stunted	or Stresse	es Plants (D1	1) (LRR A)			Raise	d Ant Mound	ds (D6) (LRR A	Ė		
☐ In	undation Visible	on Aerial Im	nagery (E	37)		Other (E	xplain in F	Remarks)				Frost-	Heave Hum	mocks (D7)			
□ s	parsely Vegetate	d Concave	Surface	(B8)														
Field Ob	servations:																	
Surface	Water Present?	Yes		No	×	Dep	th (inches):										
Water Ta	able Present?	Yes		No	X	Dep	th (inches):										
Saturation	on Present? s capillary fringe)	Yes		No	x	Dep	th (inches):		Wetla	nd Hydi	rology	Present?		Yes		lo	×
	Recorded Data	(stream ga	uge, mo	nitoring	well, a	aerial phot	os, previo	us inspection	ns), if availa	ble:								
			Evilopeli					1100 PHILL (\$1700 PHILL)										
Remarks	¥**																	
Nemarks	2.																	1
																		g g
																		Î

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

Sampling Point: 5

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

Project Site:	ct Site: Jones - Edgemoor					City			County: Bellingha			man sandili di mana					
Applicant/Owner:				State: WA				Sampling P	Sampling Point:			6					
Investigator(s):	E.Binney								Se	ction, To	wnship, F	Range: 13-37N-	2E				
Landform (hillslope, te	rrace, etc.):	slope			L	ocal	relief (cond	cave, c	onve	x, none):	none		Slop	e (%):	≥30°	%	
Subregion (LRR):	Α	Lat:	48-	-20-1	ION		Long:			122-30-2	25W	Datum:		NAD 8	13		
Soil Map Unit Name:	110-Nati l	oam,, 30 to 60% slop	es								NWI	classification:	NA				
Are climatic / hydrolog	ic conditions	on the site typical fo	r this time o	f yea	r?	Ye	es X	N	lo	☐ (If	no, expla	in in Remarks.)					
Are Vegetation □,	Soil [], Or Hydrology	☐, signif	icant	dy distur	bed'	? Are	"Norma	al Circ	cumstanc	es" prese	ent?	Yes	X	No		
Are Vegetation ,	Soil [], Or Hydrology	☐, natur	ally p	oroblem	atic?	(If ne	eeded,	expla	ain any ai	nswers in	Remarks.)					
SUMMARY OF FIN	SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.																
Hydrophytic Vegetation Present? Yes □ No X																	
Hydric Soil Present?	Yes ☐ No X Is the Sampling Area within a We						Wetland	?	Yes		No	X					
Wetland Hydrology Pre	esent?		Yes [No X												
Remarks: Parcel predominantly slopes of 30% or greater w/some lower percent areas. Plot at north end of parcel near Vewcrest road.																	
VEGETATION - Us	e scientifi	c names of plant	s														
Tree Stratum (Plot Size	Absolute % Cover		ominant		Indicator Status	Don	ninan	ce Test	Workshe	et:							
1. Acer macrophyllu	m		80	ye	es		FACU	Num	nber o	of Domina	ant Speci	es That Are	1			(\(\)	
2. Thuja plicata	20	no)		FAC	OBL	, FAC	CW, or FA	AC:					(A)			
3. Alnus rubra			05	no	0		FAC	Tota	al Nun	nber of D	ominant	Species Across	_			(D)	
4. Abies grandis			01	no	0		FACU		Strata:				5			(B)	
			106	=	Total Co	over		Perc	ent o	f Domina	nt Specie	es That Are	000/			(A (D)	
Sapling/Shrub Stratum	(Plot Size: 3	Bm radius)								CW, or FA			20%			(A/B)	
1. Symphoricarpos a	lbus		25	ye	es		FACU	Prev	valen	ce Index	worksh	eet:					
2. Oemleria cerasifor	rmis		20	ye	es		FACU			Total	% Cover	of:	Multip	ly by:			
3. Acer circinatum			05	no	,		FAC	OBL	spec	cies			x1 =				
4. Holodiscus discol	or		05	n()		UPL	FAC	W sp	ecies			x2 =				
5.								FAC	spec	ies			x3 =				
			55	=	Total Co	over		FAC	U spe	ecies			x4 =				
Llash Stratum (Diat Six	o: 4m V 4m)		5.5					70000000 2000000	spec				x5 =				
Herb Stratum (Plot Size									70				X3 -				
1. Polystichum mun	itum		30	ye	S		FACU	Colu	ımn T	otals:	SERVICE CONTROL OF	(A)			((B)	
2. Urtica dioica	15	ye	s		FAC	Prevalence Index = B/A =											
3.								Hyd	rophy	ytic Vege	etation Ir	idicators:					
4.								No		Domina	ance Tes	t is >50%					
5.								NA		Prevale	ence Inde	ex is ≤3.0 ¹					
6.										Morpho	ological A	daptations1 (Pro	vide sup	porting	data	in	
7.								NA		Remark	ks or on a	a separate sheet)	DOMESTIC X			
8.								NA		Wetlan	d Non-Va	ascular Plants ¹					
9.								NA		Probler	natic Hvo	drophytic Vegeta	tion ¹ (Ex	olain)			
10.								12/01/200		1 100.01		an opiny ao vogota	uon (Ex	Jianiy			
11.								1 Indi	aatan	of budgi	o ooil one	d wetland hydrolo	an much	ho or	annt.		
45				=	= Total Cover					turbed or			ogy musi	ne hie	sent,		
Woody Vine Stratum (F	Diet Size: 2m	radius)	40		Total Oc	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		30000000			2010-0-201						
	101 3126. 311	radius)															
1.																	
2.				2550													
	= Total Cover				Hydrophytic Vegetation						9.200		_				
% Bare Ground in Herb	Stratum 10							Pres	ent?			Yes	X	No			
Remarks:																	

SOIL									Sampli	ing Point	: 6			
Profile Desc	ription: (Describ	e to the de	pth nee	ded to	document the indicator or cor	nfirm the abs	sence of	indicato	ors.)					
Depth	Matri	×			Redox Features									
(inches)	Color (moist)	%		Color (N	loist) % Type ¹	Loc	2	Texture			Remark	S		
0-10	10YR 3/2	100						silty loar	m					
10-20	10YR 4/3	100					g	ravelly s	ilty					
10 20	101111110	100						loam						
4 -2005 (50) (2005)						-PUNEZURANTAN - 10 0				reason e				
					trix, CS=Covered or Coated Sar	nd Grains. *I	Location:			5 20115	-0. SWV 000			
100 Dates		cable to a	II LRRs,		otherwise noted.)			772	ators for Probl		Hydric S	ioils":		
☐ Histoso	il (A1)				Sandy Redox (S5)				2 cm Muck (A	110)				
	pipedon (A2)				Stripped Matrix (S6)				Red Parent M	Material (ΓF2)			
☐ Black H	listic (A3)				Loamy Mucky Mineral (F1) (e	except MLRA	A 1)		Other (Explain	n in Rem	arks)			
☐ Hydrog	en Sulfide (A4)				Loamy Gleyed Matrix (F2)									
☐ Deplete	ed Below Dark Sur	face (A11)			Depleted Matrix (F3)									
☐ Thick □	ark Surface (A12)				Redox Dark Surface (F6)									
☐ Sandy							³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or							
☐ Sandy	Gleyed Matrix (S4)			Redox Depressions (F8)				ematic.	resent, u	niess dis	turbea o		
Restrictive L	ayer (if present):													
Туре:														
Depth (Inches	s):					Hydric Sc	oils Pres	ent?		Yes		No	X	
Remarks:														
HYDROLO	ΒY													
Wetland Hyd	rology Indicators	s:												
Primary Indica	ators (minimum of	one requir	ed; chec	k all tha	at apply)			Second	lary Indicators (2 or more	e require	ed)		
	Water (A1)				Water-Stained Leaves (B9)				Vater-Stained Le					
	ater Table (A2)				(except MLRA 1, 2, 4A, and	4B)			MLRA 1, 2, 4A,					
	ion (A3)				Salt Crust (B11)	45)			rainage Pattern	an and an and				
	an ili adham							(1 <u>0.000</u>)			(C2)			
	☐ Water Marks (B1) ☐ Sediment Deposits (B2)				Aquatic Invertebrates (B13)			☐ Dry-Season Water Table (C2) ☐ Saturation Visible on Aerial Imagery (C9)						
					Hydrogen Sulfide Odor (C1)	11. i	(00)					ry (Ca)		
Drift Deposits (B3)				Oxidized Rhizospheres along	s (C3)									
					Presence of Reduced Iron (C-			hallow Aquitard	1000000000					
	posits (B5)				Recent Iron Reduction in Tille				AC-Neutral Tes					
☐ Surface	Soil Cracks (B6)				Stunted or Stresses Plants (D	1) (LRR A)		□ R	aised Ant Moun	ids (D6)	(LRR A)			
☐ Inunda					Other (Explain in Remarks)		☐ Fr	rost-Heave Hum	nmocks (D7)				
☐ Sparse	y Vegetated Cond	ave Surfac	ce (B8)											
Field Observ	ations:													
Surface Water	Present?	∕es □	No	X	Depth (inches):									
Water Table P	resent?	∕es □	No	X	Depth (inches):									
Saturation Pre	sent?	res 🗆	No	X	Depth (inches):		Wetland	d Hydrol	ogy Present?		Yes	□ No	×	
(includes capi	lary mnge)		W					,	- 3) · 1000IIII					
Describe Rec	orded Data (strea	m gauge, r	nonitorin	g well,	aerial photos, previous inspection	ons), if availab	ble:							
Remarks:														

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

Project Site:	Jones - Edge	moor					City/Co	untv:	Bellingh	nam	Sampling D	ate:	4-D	ec-20	09
Applicant/Owner:	Jones								State:	WA	Sampling P		7		
Investigator(s):	E.Binney							S	ection, Tow	vnship, Ran	ge: 13-37N-				
Landform (hillslope, te	rrace, etc.):	slope				Loc	al relief (cond	cave, conve	ex, none):	none		Slop	e (%):	≥30	%
Subregion (LRR):	Α	Lat:	4	8-20	-10N		Long:		122-30-2	5W	Datum:		NAD 8	13	
Soil Map Unit Name:	110-Nati loa	m,, 30 to 60% slop	es							NWI clas	sification:	NA			
Are climatic / hydrologi	c conditions or	the site typical fo	r this time	of ye	ear?	°y	'es X	No	☐ (If r	no, explain i	n Remarks.)				
Are Vegetation .	Soil □,	Or Hydrology	☐, sigr	nifica	ntly di	sturbe	d? Are	"Normal Ci	rcumstance	es" present?	,	Yes	X	No	
Are Vegetation .	Soil [],	Or Hydrology	☐, nati	urally	probl	ematic	? (If ne	eeded, exp	lain any an	swers in Re	emarks.)				
SUMMARY OF FIN	DINGS - Att	ach site map sl	howing	sam	pling	poin	t locations	, transec	ts, impor	tant featu	res, etc.				
Hydrophytic Vegetation	Present?		Yes	X	No										
Hydric Soil Present?			Yes	X	No		Is the Sam	pling Area	within a V	Vetland?		Yes	X	No	
Wetland Hydrology Pre	sent?		Yes	X	No										
Remarks: Parcel pre	dominantly s	lopes of 30% or g	reater w/	som	e low	er per	cent areas.	Plot locate	ed in						
A DESCRIPTION OF STREET STREET															
VEGETATION - Us	e scientific	names of plant	s												
Tree Stratum (Plot Size	e: 10m radius)		Absolute % Cover		Domin Specie		Indicator Status	Domina	nce Test V	Vorksheet:					
1. Alnus rubra			3		yes	031	FAC	Number	of Domina	nt Species	That Are				
2.				950 96	\$100°C				CW, or FA		mat / iio	5			(A)
3.								Total Nu	mber of Do	ominant Spe	cies Across	- 2			0000
4.								All Strata				5			(B)
			30	0 :	= Tota	I Cove	r	Percent	of Dominar	nt Species T	hat Are	4000/			/A (D)
Sapling/Shrub Stratum	(Plot Size: 3m	radius)							CW, or FA			100%			(A/B)
1. Rubus spectabilis			31	0 1	yes		FAC	Prevaler	nce Index	worksheet:					
2.									Total 9	% Cover of:		Multipl	y by:		
3.								OBL spe	cies			x1 =			
4.								FACW s	pecies			x2 =			
5.								FAC spe	cies			x3 =			
			30	0 =	= Tota	l Cove	r	FACU sp	pecies			x4 =			
Herb Stratum (Plot Size	e: 1m X 1m)							UPL spe	cies			x5 =			
1. Equisetum telmat	eia		30	0 1	yes		FACW	Column	Totals:		(A)			((B)
2. Athyrium filix-fem			10	0 1	yes		FAC	Colamin		Prevalence	Index = B/A :			8	1 81
3. Epilobium ciliatun			10	0)	yes		FACW	Hydroph	ytic Vege	tation Indic	ators:				
4.					Principal Control			Yes	Domina	nce Test is	>50%				
5.								NA	Prevale	nce Index is	<3.0 ¹				
6.											otations ¹ (Pro	vide sunr	ortina	data	in
7.								NA			parate sheet		zorung	uutu	
8.								NA	Wetland	Non-Vascu	ılar Plants ¹				
9.								NA	Problem	natic Hydrop	hytic Vegeta	tion ¹ (Exp	olain)		
10.															
11.								1Indicato	rs of hydric	soil and we	etland hydrolo	av must	be pre	sent.	
			50) =	= Total	Cove	r			problematio		01			
Woody Vine Stratum (P	lot Size: 3m ra	dius)													
1															
2.															
				=	= Total	Cove	ř	Hydronh	ytic Veget	ation					
% Bare Ground in Herb	Stratum 20							Present?		Ye	s	X	No		
Remarks:															

Project Site: Jones-Edgemoor

SOIL

Profile Desc Depth	Matrix			Redo	x Features						
(inches)	Color (moist)	%	Color (I	Moist) %	Type ¹	Loc ²	Texture		Remark	s	
0-10	10YR 2/1	100			-	*0	sandy silt loam	-			
10-16+	2.5Y 4/2	80	10YR	4/4 20	С	М	gravelly silt	too sat, for accu	rate profil	e desc. b	below
	oncentration, D=Depl	17.02 V	70000 TO		70	Grains. ² Locati	37 327 33			3	
	Indicators: (Applica	ble to all L	AND SECTION OF THE PARTY.		Trib.			s for Problematic	Hydric S	ioils":	
☐ Histose				Sandy Redox			<u> </u>	cm Muck (A10)	120204		
	Epipedon (A2)			Stripped Matri	4.45 mm - 1.45 - 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1			ed Parent Material	04-000-049		
	Histic (A3)			Loamy Mucky	Mineral (F1) (exc	ept MLRA 1)	☐ Ot	ther (Explain in Re	marks)		
	gen Sulfide (A4)			Loamy Gleyed							
	ed Below Dark Surfa	ce (A11)		Depleted Matr	ix (F3)						
	Dark Surface (A12)		×	Redox Dark S			3	22 2 1200	1235	\$0 DE	74
Sandy	Mucky Mineral (S1)			Depleted Dark	Surface (F7)			s of hydrophytic ve must be present,			
Sandy	Gleyed Matrix (S4)			Redox Depres	sions (F8)		problema		arnees un	beu C	
lestrictive l	_ayer (if present):										
уре:											
epth (Inche	s):					Hydric Soils P	resent?	Yes	X	No	
	GY Irology Indicators:										
Vetland Hyd		ne required	; check all th	at apply)			Secondary	Indicators (2 or mo	ore require	ed)	
etland Hydrimary Indic	frology Indicators: ators (minimum of or	ne required		The factor of the state of the	Leaves (B9)		TOWN SALLOWS	Provide the Providence of the	2 MACRY	ed)	
vetland Hyd rimary Indic C Surfac	drology Indicators: ators (minimum of or e Water (A1)	ne required	; check all th	Water-Stained		3	☐ Water	r-Stained Leaves (B9)	ed)	
rimary Indic Surfac High W	drology Indicators: ators (minimum of or e Water (A1) Vater Table (A2)	ne required		Water-Stained	1, 2, 4A, and 4B)	☐ Water	r-Stained Leaves (A 1, 2, 4A, and 4E	B9)	ed)	
rimary Indic Surfac High W Satura	trology Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3)	ne required		Water-Stained (except MLRA Salt Crust (B1	1, 2, 4A, and 4B)	☐ Water (MLR	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10	B9) 3)	ed)	
rimary Indic Surfac High W Satura Water	trology Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3) Marks (B1)	ne required		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte	1, 2, 4A, and 4B 1) ebrates (B13))	☐ Water (MLR ☐ Drains	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl	B9) 3)) e (C2)		
Vetland Hydrimary Indic X Surfac X High W X Satura Water Sedim	Arology Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)	ne required		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi	1, 2, 4A, and 4B 1) ebrates (B13) ide Odor (C1)		☐ Water (MLR ☐ Draina ☐ Dry-S ☐ Satura	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae	B9) 3)) e (C2) rial Image		
Vetland Hydrimary Indic X Surfac X High V X Satura Water Sedima	Arclogy Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	ne required		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo	A 1, 2, 4A, and 4B 1) brates (B13) ide Odor (C1) ospheres along Liv		☐ Water (MLR ☐ Drains ☐ Dry-S ☐ Satura ☐ Geom	r-Stained Leaves (A 1, 2, 4A, and 4B age Patterns (B10 eason Water Tabl ation Visible on Ae orphic Position (D	B9) 3)) e (C2) rial Image		
Vetland Hydrimary Indic X Surfac X High W X Satura Water Sedime Drift De Algal M	Arclogy Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)	ne required		Water-Stained (except MLRA Salt Crust (B1' Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Ro	A 1, 2, 4A, and 4B a) bbrates (B13) ide Odor (C1) bspheres along Liveduced Iron (C4)	ving Roots (C3)	Water (MLR Drains Dry-S Satura Geom Shallo	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae arorphic Position (D ow Aquitard (D3)	B9) 3)) e (C2) rial Image		
Vetland Hydrimary Indic X Surfac X High V X Satura Water Sedime Drift De Algal M	Arclogy Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) And or Crust (B4) eposits (B5)	ne required		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re	A 1, 2, 4A, and 4B 1) bebrates (B13) ide Odor (C1) bepheres along Liveduced Iron (C4) eduction in Tilled S	ving Roots (C3)	Water (MLR Draina Dry-S Satura Geom Shalld	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5)	B9) 3)) e (C2) erial Image 2)	ery (C9)	
Vetland Hydrimary Indic X Surfac X High V X Satura Water Sedim Drift Do Algal M Iron De	Arclogy Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Anat or Crust (B4) eposits (B5) e Soil Cracks (B6)			Water-Stained (except MLRA Salt Crust (B1) Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre	A 1, 2, 4A, and 4B 1) bebrates (B13) ide Odor (C1) bepheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1)	ving Roots (C3)	Water (MLR Drain Dry-S Satura Geom Shalla FAC-1 Raise	r-Stained Leaves (A 1, 2, 4A, and 4B age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6	B9) (C2) (C2) (C3) (LRR A)	ery (C9)	
Vetland Hydrimary Indic X Surfac X High V X Satura Water Drift Do Iron Do Surface Inunda	Arclogy Indicators: ators (minimum of or 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) tion Visible on Aerial	Imagery (l		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re	A 1, 2, 4A, and 4B 1) bebrates (B13) ide Odor (C1) bepheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1)	ving Roots (C3)	Water (MLR Drain Dry-S Satura Geom Shalla FAC-1 Raise	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5)	B9) (C2) (C2) (C3) (LRR A)	ery (C9)	
Vetland Hydrimary Indic X Surfac X High W X Satura Water Drift De Algal M Iron De Surface Inunda Sparse	Archogy Indicators: ators (minimum of or 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) tion Visible on Aerial	Imagery (l		Water-Stained (except MLRA Salt Crust (B1) Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre	A 1, 2, 4A, and 4B 1) bebrates (B13) ide Odor (C1) bepheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1)	ving Roots (C3)	Water (MLR Drain Dry-S Satura Geom Shalla FAC-1 Raise	r-Stained Leaves (A 1, 2, 4A, and 4B age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6	B9) (C2) (C2) (C3) (LRR A)	ery (C9)	
Vetland Hydrimary Indic X Surfac X High W X Satura Water Drift De Algal M Iron De Surface Inunda Sparse ield Observ	Arclogy Indicators: ators (minimum of or e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) And or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerial ely Vegetated Concaverations:	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Ri Recent Iron Re Stunted or Stre Other (Explain	A 1, 2, 4A, and 4B brates (B13) de Odor (C1) ospheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1) in Remarks)	ving Roots (C3)	Water (MLR Drain Dry-S Satura Geom Shalla FAC-1 Raise	r-Stained Leaves (A 1, 2, 4A, and 4B age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6	B9) (C2) (C2) (C3) (LRR A)	ery (C9)	
Vetland Hydrimary Indice C Surface C High W C Satura Drift Do Drif	Archology Indicators: ators (minimum of or 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) tion Visible on Aerial ely Vegetated Concaverations: ar Present?	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain	A 1, 2, 4A, and 4B 1) bebrates (B13) ide Odor (C1) bespheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1) in Remarks) thes): 1-3"	ving Roots (C3)	Water (MLR Drain Dry-S Satura Geom Shalla FAC-1 Raise	r-Stained Leaves (A 1, 2, 4A, and 4B age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6	B9) (C2) (C2) (C3) (LRR A)	ery (C9)	
Vetland Hydrimary Indic X Surfac X High W X Satura Drift Do Algal M Iron De Surface Inunda Sparse ield Observ Vater Table Faturation Pre-	Archology Indicators: ators (minimum of or 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) tion Visible on Aerial ely Vegetated Concaverations: ar Present? Present? Yesesent? Yesesent?	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Ri Recent Iron Re Stunted or Stre Other (Explain	a 1, 2, 4A, and 4B 1) bebrates (B13) ide Odor (C1) bepheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1) in Remarks) thes): 1-3" thes): surface	ring Roots (C3) Soils (C6) (LRR A)	Water (MLR Drain Dry-S Satura Geom Shalla FAC-1 Raise	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6 Heave Hummocks	B9) (C2) (C2) (C3) (LRR A)	ery (C9)	lo 🗆
Primary Indic X Surfac X High V X Satura Water Sedim Drift De Iron De Inunda Sparse ield Observ curface Water Vater Table Featuration Prencludes capi	Archology Indicators: ators (minimum of or 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) tion Visible on Aerial ely Vegetated Concaverations: ar Present? Present? Yesesent? Yesesent?	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain Depth (inc	a 1, 2, 4A, and 4B a) brates (B13) de Odor (C1) ospheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1) in Remarks) hes): 1-3" hes): surface hes): surface	ving Roots (C3) Soils (C6) (LRR A) Wetl	☐ Water (MLR ☐ Drain: ☐ Dry-S ☐ Satura ☐ Geom ☐ Shallc ☐ FAC-N ☐ Raise ☐ Frost-	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6 Heave Hummocks	B9) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	ery (C9)	lo 🗆
Vetland Hydrimary Indice X Surface X High W X Satura Water Sedime Iron De Iron De Inunda Sparse ield Observer Vater Table Franciudes caping	Archology Indicators: ators (minimum of or 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) tion Visible on Aerial ely Vegetated Concaverations: er Present? Present? Yesesent? Yesesent? Yesesent? Yesesent? Yesesent?	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain Depth (inc	a 1, 2, 4A, and 4B a) brates (B13) de Odor (C1) ospheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1) in Remarks) hes): 1-3" hes): surface hes): surface	ving Roots (C3) Soils (C6) (LRR A) Wetl	☐ Water (MLR ☐ Drain: ☐ Dry-S ☐ Satura ☐ Geom ☐ Shallc ☐ FAC-N ☐ Raise ☐ Frost-	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6 Heave Hummocks	B9) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	ery (C9)	lo 🗆
Vetland Hydrimary Indic X Surfact X High W X Satura Difft Di Algal M Iron De Surface Inunda Sparse Seld Observ urface Water /ater Table Faturation Proceed of the concludes capite escribe Receivers	Archology Indicators: ators (minimum of or 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) tion Visible on Aerial ely Vegetated Concaverations: er Present? Present? Yesesent? Yesesent? Yesesent? Yesesent? Yesesent?	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain Depth (inc	a 1, 2, 4A, and 4B a) brates (B13) de Odor (C1) ospheres along Liveduced Iron (C4) eduction in Tilled Sesses Plants (D1) in Remarks) hes): 1-3" hes): surface hes): surface	ving Roots (C3) Soils (C6) (LRR A) Wetl	☐ Water (MLR ☐ Drain: ☐ Dry-S ☐ Satura ☐ Geom ☐ Shallc ☐ FAC-N ☐ Raise ☐ Frost-	r-Stained Leaves (A 1, 2, 4A, and 4E age Patterns (B10 eason Water Tabl ation Visible on Ae norphic Position (D ow Aquitard (D3) Neutral Test (D5) d Ant Mounds (D6 Heave Hummocks	B9) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	ery (C9)	lo 🗆

Sampling Point: 7

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

ALCOHOLO STRUCTURE						0	2514206625	D 111	drusesy		1900			
Project Site:	Jones - Edge	moor				City/Co	ounty:	Bellingh		Sampling Da		1.750.7	ec-20	109
Applicant/Owner:	Jones							State:	WA	Sampling Po		8		
Investigator(s):	E.Binney	11000			90	!!! (and the same of	ge: 13-37N-2		- (0/)-	>20	07
Landform (hillslope, te		slope		40.2	0-10N	ocal relief (con	cave, conve		none	Datum:		e (%):		%
Subregion (LRR):	A 440 Netiles	Lat:		46-2	U-TUN	Long:		122-30-2		sification:	NA	NAD 8	33	
Soil Map Unit Name:		m,, 30 to 60% slop				Yes X	No	□ (If r	98400 13	T 6210 T 20 100	INA			
Are climatic / hydrologi										n Remarks.)	V	~	Ma	
Are Vegetation .	Soil [],	Or Hydrology		59331CU ₂	antly disturb				es" present?		Yes	Х	No	
Are Vegetation .	Soil [],	Or Hydrology	□, na	turan	y problema	uc? (ii ii	eeded, exp	nam any an	swers in Re	marks.)				
SUMMARY OF FIN	DINGS - Att	ach sito man s	howing	san	nlina noi	int locations	transec	ts imnor	tant foatu	res etc				
Hydrophytic Vegetation		acii site iliap s	Yes		No X	The rocations	, uunoco	to, impor	tunt routu	103, 010.				
Hydric Soil Present?	ii i iosoiki		Yes		No X	Is the Sam	pling Area	within a V	Netland?		Yes		No	X
Wetland Hydrology Pre	esent?		Yes	×	No	is the out	ipinig Area		vedana.		100	_	,,,,	, x.
		I£ 20%					Dist sees t		- 0	- b 18/1				
Remarks: Parcel pre	edominantiy s	lopes of 30% or g	greater w	//son	ie lower pe	ercent areas.	Plot near t	top of stop	e @ north :	above w.L.				
VEGETATION - Us	e scientific	names of plant	s											
Tree Stratum (Plot Size	1965 BW E		Absolut		Dominant	Indicator	Domina	nce Test V	Vorksheet:					
NAME OF THE PARTY	o. Tom radido,	<i>(</i>)	% Cove	38500	Species?	Status FAC	100							
Salix scouleriana Alnus rubra				70 15	yes	FAC		of Domina CW, or FA	nt Species 7	That Are	2			(A)
3.				15	no	FAC	10 101sT-5U(1)2390							
4.							All Strata		ominant Spe	cies Across	5			(B)
11				35	= Total Co	ver	Description	- (D	-10	Th - 4 A				
Sapling/Shrub Stratum	(Plot Size: 3m	radius)			Total 00	•••		CW, or FA	nt Species T .C:	nat Are	40%			(A/B)
1. Synphoricarpos al		, ruarus,	- 2	10	yes	FACU	Prevaler	nce Index	worksheet:					
2. Rubus procerus	Dus			05	no	FACU	1 TOVAICE		% Cover of:		Multip	ly hy		
3. Holodiscus discole	or			05	no	UPL	OBL spe		0		x1 =	0		
4. Thuja plicata				01	no	FAC	FACW s		0		x2 =	0		
5.						10.000	FAC spe		91		x3 =	273		
-				51	= Total Cov	ver	FACU sp		100		x4 =	400		
Unit Start and (Blat Sim	4 V 4\		- 1		Total oo									
Herb Stratum (Plot Size	25						UPL spe	cies	0		x5 =	0		
1. Polystichum muni	itum		2	25	yes	FACU	Column	Totals:	191	(A)		673	((B)
2. Rubus ursinus			19	15	yes	FACU			The state of the state of	e Index = B/A	= 3.5			
3. Pteridium aquilinu	ım		1	0	yes	FACU	12/21 12/11		tation Indic					
4.							No	Domina	nce Test is	>50%				
5.							No	Prevale	nce Index is	≤3.0 ¹				
6.							NA			tations1 (Prov		porting	data	in
7.							2000000			parate sheet)				
8.							NA	Wetland	Non-Vascu	ılar Plants ¹				
9.							NA	Problem	natic Hydrop	hytic Vegetati	ion¹ (Ex	olain)		
10.														
11.										tland hydrolo	gy must	be pre	sent,	
			5	0	= Total Cov	/er	unless di	sturbed or	problematio				-	
Woody Vine Stratum (P	Plot Size: 3m ra	adius)												
1.														
2.														
					= Total Cov	/er	Hydroph	ytic Veget	tation					
% Bare Ground in Herb	Stratum 25						Present?		Ye	s		No		X
Remarks:														

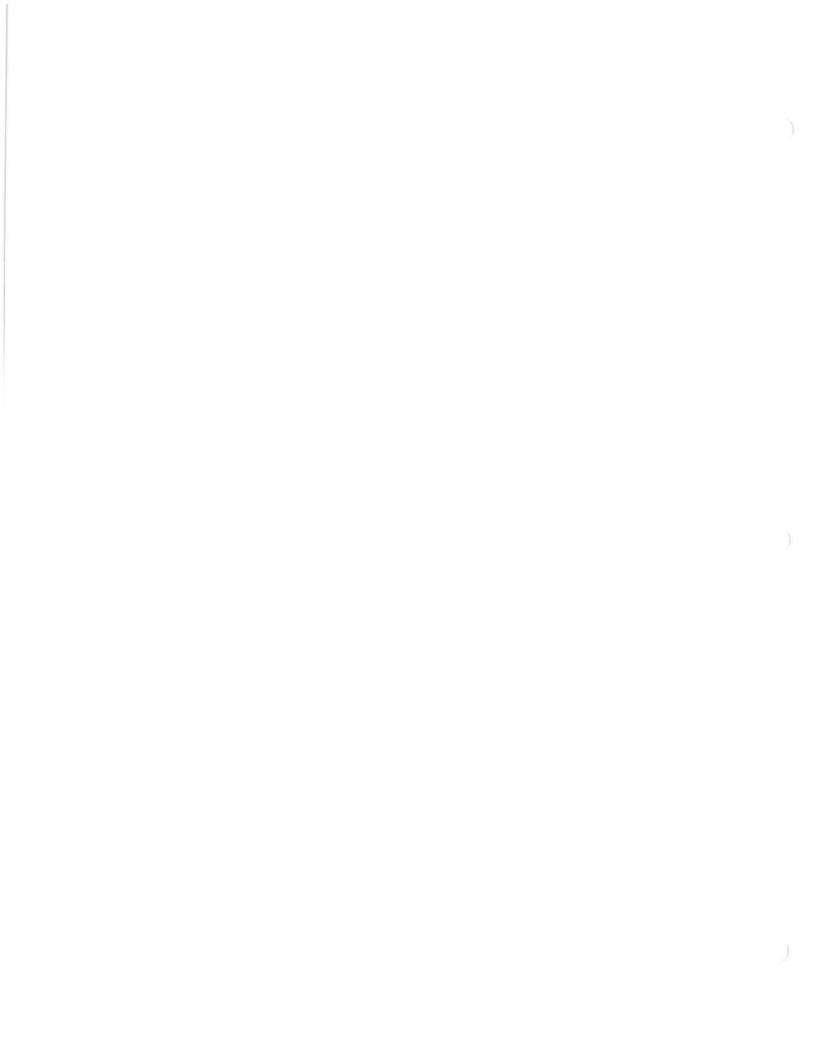
Project Site: Jones-Edgemoor

SOIL

Depth					Redox Features	1 , 2					
(inches) 0-18+	Color (moist) 10YR 3/2	100		olor (M	oist) % Type	Loc ²	Textur		Remarks		
						10 : 2					
100000000000000000000000000000000000000		50,500,000,000	Direct Resident	NO INCHES DE	rix, CS=Covered or Coated Sa	ind Grains. Lo			Uudela Calla	3.	
	Indicators: (Applicab ol (A1)	ie to ali L	LKKS, U	iniess	Sandy Redox (S5)			icators for Problematic I 2 cm Muck (A10)	nyunc solls	·	
	Epipedon (A2)				Stripped Matrix (S6)			Red Parent Material (TF2\		
	Histic (A3)				Loamy Mucky Mineral (F1) (excent MI RA		Other (Explain in Rem			
	gen Sulfide (A4)				Loamy Gleyed Matrix (F2)	oxoopt meror	., .	Other (Explain in Non	idiko)		
	ed Below Dark Surface	e (A11)			Depleted Matrix (F3)						
	Dark Surface (A12)	(*****)			Redox Dark Surface (F6)						
	Mucky Mineral (S1)				Depleted Dark Surface (F7)		3Inc	licators of hydrophytic veg	etation and	wetland	
	Gleyed Matrix (S4)				Redox Depressions (F8)		hyd	rology must be present, u			
S 0.00 107 10	Layer (if present):						рго	olematic.			
уре:											
epth (Inche	es):					Hydric Soi	Is Present?	Yes	□ N	0	X
IYDROLO	CALLEGE CONTROL STATE OF THE TANK OF THE										
etland Hyd	drology Indicators:	required	l: chack	all the	t anniu)		Saco	ndary Indicators /2 or mor	a required)		
Vetland Hyd	drology Indicators: cators (minimum of one	required	; check	02-30	TANKS NAME OF TANKS			ndary Indicators (2 or mor	239		
letland Hydrimary Indic	drology Indicators: cators (minimum of one ce Water (A1)	required	l; check	all tha	Water-Stained Leaves (B9)	14B)	Seco	Water-Stained Leaves (B	9)		
rimary Indic Surfac High V	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2)	required	l; check		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and	1 4B)		Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B)	9)		
rimary Indic Surfac High V Satura	drology Indicators: cators (minimum of one be Water (A1) Vater Table (A2) ution (A3)	required	l; check		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11)	i 4B)		Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)	9)		
rimary Indic Surfac High V Satura Water	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2) ation (A3) Marks (B1)	required	l; check		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13)	i 4B)		Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table	9) (C2)	29)	
Vetland Hydrimary Indice Surface High V Satura Water Sedime	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2)	required	l; check		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	}	0	Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aeri	9) (C2) al Imagery (C9)	
Vetland Hydrimary Indic Surface High V Satura Water Sedima	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2) ttion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	required	l; check		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along	g Living Roots ((C3)	Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aeri Geomorphic Position (D2	9) (C2) al Imagery (C9)	
/etland Hydrimary Indice Surface High V Satura Water Sedimal Algal M	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2) stion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)	required	l; check		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C	g Living Roots (C4)	(C3)	Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aeri Geomorphic Position (D2 Shallow Aquitard (D3)	9) (C2) al Imagery (C9)	
/etland Hydrimary Indice Surface High V Satura Water Sedime Drift De I non De	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2) stion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	required	l; check		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C) Recent Iron Reduction in Tilli	g Living Roots (C4) ed Soils (C6)	C3)	Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aeri Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5)	9) (C2) al Imagery ((C9)	
retiand Hydrimary Indice Surface High V Satura Water Sedime Drift De Algal M Iron De	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2) Advisor (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6)		Carlos	0 00000	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (CRecent Iron Reduction in Till) Stunted or Stresses Plants (I	g Living Roots (C4) ed Soils (C6)	C3)	Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aeri Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	9) (C2) al Imagery ((C9)	
Vetland Hydrimary Indice Surface High V Satura Water Sedime Drift De Algal M Iron De Surface Inunda	drology Indicators: cators (minimum of one ce Water (A1) Vater Table (A2) stion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ee Soil Cracks (B6) stion Visible on Aerial In	magery (l	B7)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C) Recent Iron Reduction in Tilli	g Living Roots (C4) ed Soils (C6)	C3)	Water-Stained Leaves (B (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aeri Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5)	9) (C2) al Imagery ((C9)	
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Sampling Point: 8

APPENDIX B: WETLAND RATING FORMS



Wetland	name	or	num	ber
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WETLAND RATING FORM - WESTERN WASHINGTON

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

Name of wetland (if known):	Date of site visit:
Rated by	Trained by Ecology? YesNo Date of training
SEC: TWNSHP: RNGE:	Is S/T/R in Appendix D? Yes No
Map of wetland u	nit: Figure Estimated size
SI	UMMARY OF RATING
Category based on FUNCTIO	ONS provided by wetland
I II III IV	7
Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50	Score for Water Quality Functions Score for Hydrologic Functions
Category IV = Score < 30	Score for Habitat Functions TOTAL score for Functions
I II Does not A	CHARACTERISTICS of wetland Apply (choose the "highest" category from above)
	pasic information about the wetland unit
Wetland Unit has Sp Characteristics	ecial Wetland HGM Class used for Rating
Estuarine	Depressional
Natural Heritage We	
Bog	Lake-fringe
Mature Forest	Slope
Old Growth Forest	Flats
Coastal Lagoon	Freshwater Tidal
Interdunal	
None of the above	Check if unit has multiple HGM classes present

Wetland	name	or	num	ber	
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Does the wetland unit being rated meet any of the criteria below?

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

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?		
For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
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 I Natural Heritage Wetlands (see p. 19 of data form).		
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		
SP4. Does the wetland unit have a local significance in addition to its functions? 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.		

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

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

Classification of Wetland Units in Western Washington

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

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

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

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

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

NO - go to 3

YES - The wetland class is Flats

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

- 3. Does the entire wetland unit meet both of the following criteria?
 - ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO - go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)

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

____The wetland is on a slope (slope can be very gradual),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

The water leaves the wetland without being impounded?

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

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

5. Do	oes 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.

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

Wetland name or number

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

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

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

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

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

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

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

S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) Slope is 1% - 2% Slope is 2% - 5% Slope is greater than 5% points = 1 points = 0	
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > ½ of area points = 2 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons	Figure
S	Total for S 1 Add the points in the boxes above	<u> </u>
S	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	(see p.67)
	 — Grazing in the wetland or within 150ft — Untreated stormwater discharges to wetland 	
	 Tilled fields, logging, or orchards within 150 feet of wetland Residential, urban areas, or golf courses are within 150 ft upslope of wetland Other 	multiplier
	YES multiplier is 2 NO multiplier is 1	
S	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	

Comments

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
S	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 > 1/8in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. points = 6	
	Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 Dense, uncut, rigid vegetation > 1/4 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	Add the points in the boxes above	<u> </u>
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	
	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).
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	

Comments

Wetland name or	number
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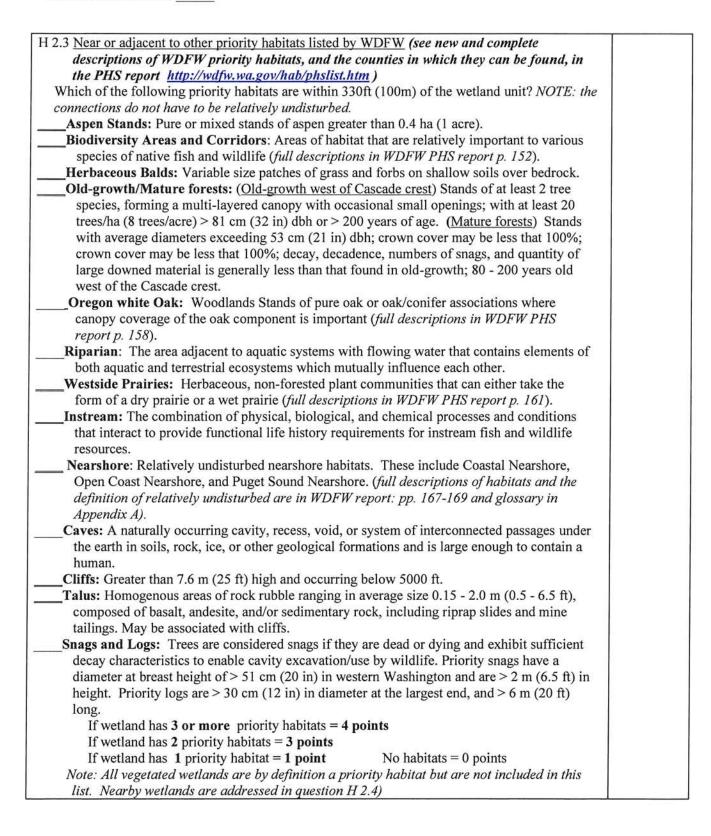
These questions apply to wetlands of all HGM HABITAT FUNCTIONS - Indicators that unit function		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential to pro-	ovide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72) Check the types of vegetation classes present (as defined class is ¼ acre or more than 10% of the area if unit is	by Cowardin)- Size thres smaller than 2.5 acres. cover) by, sub-canopy, shrubs, he within the forested polygo	hold for each	Figure
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
H 1.2. Hydroperiods (see p. 73) Check the types of water regimes (hydroperiods) pre regime has to cover more than 10% of the wetland or descriptions of hydroperiods) Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjates a seasonally flowing stream in, or adjacent to, the Lake-fringe wetland = 2 points	4 or more types present 2 types present 1 type present cent to, the wetland	for t points = 3	Figure
Freshwater tidal wetland = 2 points	Map of hyd	roperiods	
H 1.3. Richness of Plant Species (see p. 75) Count the number of plant species in the wetland that of the same species can be combined to meet the size You do not have to name the species. Do not include Eurasian Milfoil, reed canarygra. If you counted: List species below if you want to:	threshold)		

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 the 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	
High = 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	
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 the 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 (>30degree 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.	
H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5	

Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species? Figure H 2.1 Buffers (see p. 80) Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed." — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) — 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. Points = 4— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% Points = 3circumference, . — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3If buffer does not meet any of the criteria above — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2— No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2- Heavy grazing in buffer. Points = 1— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled</p> fields, paving, basalt bedrock extend to edge of wetland Points = 0. Buffer does not meet any of the criteria above. Points = 1Aerial photo showing buffers H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H2.3) NO = go to H 2.2.2H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H2.3) NO = H 2.2.3H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = 1 point NO = 0 points

Total for page_____



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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit 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 1.1NO	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat. I
YES = Category I NO go to SC 1.2	
 SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp. are the only species that cover 	Cat. II
more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Dual rating I/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 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 Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NO not a Heritage Wetland	Cat. I
CC 2 0 D	
SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions. 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 - go to Q. 3 No - go to Q. 2	
2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?	
Yes - go to Q. 3 No - Is not a bog for purpose of rating	
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
Yes – Is a bog for purpose of rating No - go to Q. 4	
NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
1. Is the unit 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 = Category I No Is not a bog for purpose of rating	Cat. I

SC 4.0 Forested Wetlands (see p. 90)

Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.*

— Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.

NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.

Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 - 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.

YES = Category I

NO ____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)

YES = Go to SC 5.1

NO___ not a wetland in a coastal lagoon

SC 5.1 Does the wetland meets all of the following three conditions?

- The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).
- At least 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)

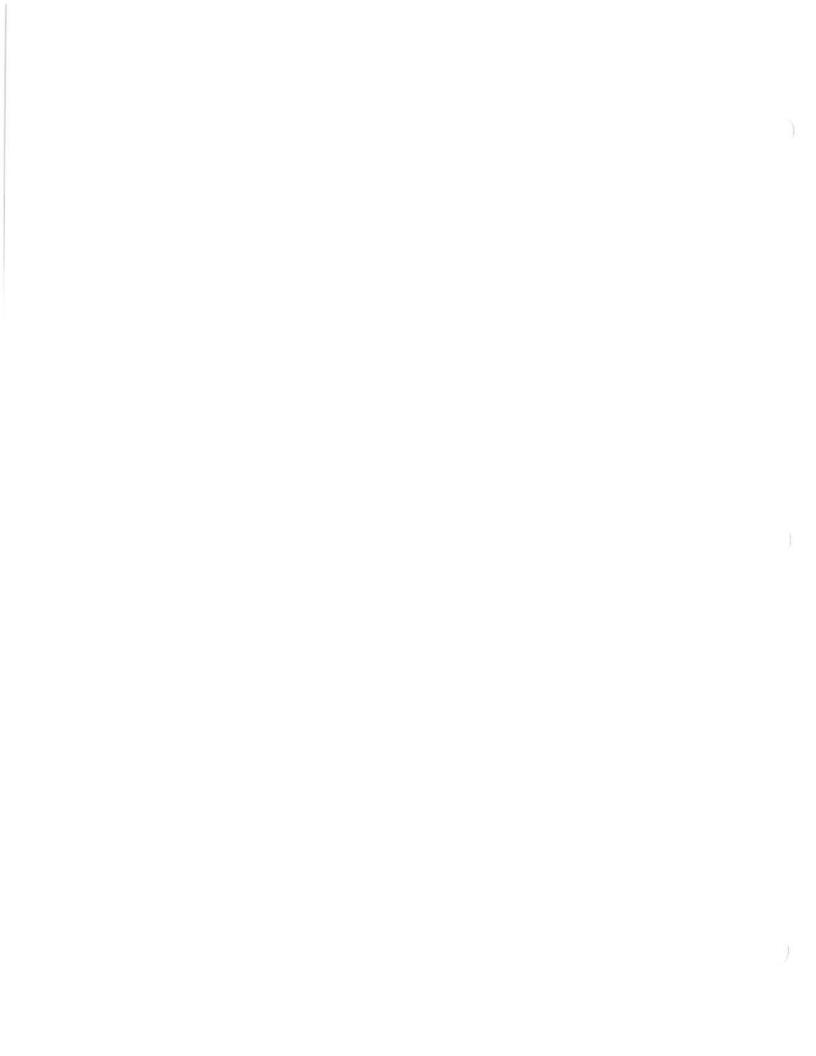
YES = Category I

NO = Category II

Cat. I

Cat. II

SC 6.0 Interdunal Wetlands (see p. 93)	
Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland	
Ownership or WBUO)?	
YES - go to SC 6.1 NO 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 SR 103 	
 Grayland-Westport- lands west of SR 105 	
 Ocean Shores-Copalis- lands west of SR 115 and SR 109 	
SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?	
YES = Category II $NO - go to SC 6.2$	Cat. II
SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II
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	



JONES FAMILY TRUST EDGEMOOR PROPERTY BIOLOGICAL CRITICAL AREAS RECONNAISSANCE & DELINEATION REPORT BELLINGHAM, WASHINGTON

JANUARY 2010

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