SAN JUAN COUNTY PARCEL #371112001
SAN JUAN COUNTY, WASHINGTON
WETLAND DELINEATION REPORT

Submitted to: Christine Johnson
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August 22, 2014

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Lead Author Qualifications

Jeff Ninnemann, PWS, LG is a wetland ecologist with over 12 years of experience in wetland delineation, stream assessment, and fish and wildlife assessment. Mr. Ninnemann is a certified Professional Wetland Scientist (PWS certification number 1829) through the Society of Wetland Scientists Professional Certification Program. He completed the five-day training course for Wetland Delineations through the Wetland Training Institute, the two-day Department of Ecology training courses for Wetland Rating in both Eastern and Western Washington, and Ecology's two-day Ordinary High Water Mark (OHWM) Determination training. In addition, Mr. Ninnemann has completed multiple continuing education courses in advanced hydric soil indicators, plant identification, and mitigation design, review, and implementation. His areas of expertise include wetland identification and delineation, wetland mitigation and restoration design, fish and wildlife assessments, permitting, project management, vegetation analysis, and native plant identification.

Mr. Ninnemann performed the field reconnaissance, identified and delineated the wetland, and was the lead author of this report.

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ACRONYMS AND ABBREVIATIONS

County	San Juan County
Ecology	Washington State Department of Ecology
Element	Element Solutions
FAC	Facultative Wetland Indicator Rating
FACU	Facultative Upland Wetland Indicator Rating
FACW	Facultative Wetland Indicator Rating
GMA	Growth Management Act
LMC	Leavenworth Municipal Code
NCARS	North Carolina Agricultural Research Service
NRCS	Natural Resources Conservation Service
OBL	Obligate Wetland Plant Rating
RCW	Revised Code of Washington
SMA	Shoreline Management Act
UPL	Upland Wetland Indicator Rating
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WAC	Washington Administrative Code
WMVCS	Western Mountains, Valleys and Coast Supplement to the 1987 COE Wetland Delineation Manual

Executive Summary

Two wetland areas (Wetland A and B) exists on the subject property. Wetland A occupies approximately 5,900 SF (0.14 acres) and Wetland B approximately 872 SF (0.02 acres) of San Juan County Parcel #371112001, located on Waldron Island. Wetland A and B were determined to be a PSSE (Palustrine, Shrub-Scrub, Seasonally Flooded/Saturated) wetlands. Wetland A & B are a San Juan County Category II wetlands. Wetland A will require a 150-ft low-intensity, 225-ft moderate-intensity, and 300-ft high-intensity buffers. Wetland B is below the San Juan County size jurisdiction and will not have a buffer.

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1 Introduction

This document presents the results of a wetland delineation of regulated wetlands for San Juan County Parcel #371112001, located on Waldron Island, Washington. Element Solutions (Element) conducted this work under contract with Christine Johnson and C. Terrigal Burn.

The property occupies one tax parcel that totals approximately 8 acres. The site is located in the northeast ¼ of Section 11, Township 37 N, Range 3 West of the Willamette Meridian.

The purpose of this wetland delineation was to determine the size, location, and category of any wetlands on the subject property in order assist in determining the development potential of the property.

Element evaluated the wetland areas, wetland functional values, wetland categories, and conditions on the site. Buffer requirements were determined based upon the category of the critical wetland areas as determined by the Washington State Wetland Rating System.

2 Regulatory Authority

2.1 Importance of Wetland Delineations

As part of the San Juan County Department of Planning (County) permitting process, wetland delineation is required whenever land disturbing activities occur within or in close proximity to a wetland or a wetland buffer area. The County requires a mitigation and restoration plan whenever impacts to wetlands or wetland buffer areas may occur. A wetland designation with associated buffer zones ensures the protection of valuable wetland resources of San Juan County and the United States.

Wetlands are an essential component of the earth's ecosystems. Wetlands have ecosystem value related to their role in improving water quality, cycling nutrients, reducing erosion, and providing habitat for a variety of aquatic and terrestrial organisms. Wetlands also provide critical nesting and feeding habitat for many wildlife species, and are a source of fresh water.

The wetlands referred to in this report conform to the USACE's 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

2.2 Jurisdictional Regulations

Wetland delineation is required whenever development or land disturbing activities occur in or near a wetland or wetland buffer area; (San Juan County's Unified Development Code [UDC] 18.30; Revised Code of Washington [RCW] RCW 90.48.030; 33 United States Code [USC] 1344; 40 CFR Parts 230 and Parts 232; and 33 CFR Parts 320-330). The County Planning and Development Services and Washington State Department of Ecology (Ecology) require a mitigation and restoration plan whenever there are impacts to wetlands or wetland buffer areas. The U.S. Army Corps of Engineers (USACE) requires

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additional permits and a mitigation and restoration plan whenever a wetland within its jurisdiction is impacted. A wetland designation with associated buffer zones ensures the protection of valuable wetland resources of San Juan County, State of Washington, and the United States. Specific regulations are stated in the following subsections.

2.2.1 Federal Regulations

In Section 404 of the Federal Water Pollution Control Act (Clean Water Act, P.L. 92-500, as amended), USACE and EPA share authority to regulate the placement of fill materials in wetlands and other waters of the U.S. and requires permits for such activities. Additionally, Section 401 of the Clean Water Act regulates activities involving discharges into wetlands and requires that activities comply with water quality standards and are certified by Ecology or the appropriate tribal authority. Wetlands are also protected by Section 10 of the Rivers and Harbors Act of 1899, Coastal Zone Management Act, Endangered Species Act of 1973, National Historic Preservation Act, Magnuson-Stevens Act, Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act of 1934 (revised 1995).

2.2.2 State Regulations

The Growth Management Act (GMA) (RCW 36.70A.172 and RCW 36.70A.170) delegates the authority to describe and regulate critical areas to local county or city regulatory agencies.

The State of Washington, through Ecology, delegates its authority to the local agencies, but it retains its right to regulate critical areas under RCW 90.48.030.

2.2.3 Local Regulations

San Juan County regulates all activities in and adjacent to wetlands, streams, and other critical habitats as outlined in the Unified Development Code. Chapter 18, section 18.30.150 of this code presents the requirements of the wetlands delineation report.

3 Methods

3.1 Preliminary & On-site Review

Element performed a three-step evaluation to determine the presence and extent of wetlands and other critical habitats on the study parcel. This evaluation began with a preliminary discussion of the subject property between the Element wetland specialist and Christine Johnson. During the discussion, Ms. Johnson was interviewed about the property, potential future development plans, and the site history. Element then conducted a data review of existing information regarding the subject parcel. Detailed field investigations were performed on February 13, 2012 and July 29, 2014 to evaluate site vegetation, soils, and hydrology.

The goal of the data review and the site investigation was to accurately describe the geologic, hydrologic, and biological aspects of the parcels in order to provide sufficient data for the client and the regulatory agencies to make informed decisions regarding any existing wetlands.

Public resource documents were used to provide initial site information on vegetation, soils, hydrology, and critical habitats. These resources included the following:

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- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey Natural Resources Conservation Service Hydric Soils List for San Juan County, September 22, 2009
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory, 2011
- Washington State Department of Natural Resources, Forest Practice Application Review System (FPARS), ARCIMS mapping application, 2014

Wetlands are identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology, all of which must be present for an area to be considered a jurisdictional wetland as described in the USACE Wetland Delineation Manual (Environmental Laboratory 1987) and Corps Regional Supplements (U.S. Army Corps of Engineers 2010) and the Washington State Wetlands Identification and Delineation Manual (Ecology, 1997) and WAC 173-22-035.

3.2 Survey Protocols

During the field investigation, the survey protocols modeled those presented in Section D - Routine Determinations, of the 1987 USACE "Wetlands Delineation Manual" and amended under the 2008 "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region." Survey transects were established along the wetland to describe vegetation, hydric soils, and wetland hydrology (Ecology, 1997, USACE, 1987, USACE, 2008, USDA, 1992). The USACE Regional Supplement wetland determination data forms (Appendix A) were used to collect data and determine whether soil pit locations met the wetland criteria (USACE, 2010).

Vegetative communities were assessed initially to estimate the boundary of the wetland (Hitchcock and Cronquist 1973, Pojar and MacKinnon 1994, Cooke 1997, Harrington 1977, Harrington and Durrell 1985, Reed, 1988). Once this zone was established, soil test pits were excavated at the edge of the zone to more accurately establish the actual boundary between the wetland and the upland areas within the property boundaries. These test pits were used to evaluate soils for hydric indicators (NCARS, 2004, USDA, 2006, and USACE 2010). Additional test pits (not cataloged) were excavated in the wetland and upland areas to determine the presence or absence of saturated soil characteristics.

3.3 Hydrophytic Vegetation

Cowardin et al. developed a method of classifying hydrophytic vegetation for the U.S. Fish and Wildlife Service, using OBL, FACW, and FAC wetland plants (Cowardin et al, 1987). OBL wetland plant species almost always (99 percent) occur in wetlands and rarely occur in upland areas. A FACW plant has a 67 to 99 percent probability of occurring in wetlands. A FAC plant occurs 33 to 67 percent of the time in a wetland, and a facultative upland (FACU) plant has a 1 to 33 percent probability of occurring in wetlands. An area is considered to have hydrophytic vegetation if greater than 50 percent of the plant species from all of the structural layers of the plant community have an indicator status of OBL, FACW, or FAC; the presence of hydrophytic vegetation qualifies the area as a wetland. Such definitions are included in National List of Plant Species That Occur in Wetlands (Reed, 1988, 1993, Lichvar and Kartesz. 2009).

Dominant plant species are then determined for each vegetative layer (e.g., canopy, shrub, and herbaceous), generally within a 30-foot radius of each plot, using the Dominance Test Worksheet provided by USACE (USACE, 2008). A calculation is then performed to determine the percentage of wetland plants compared to the total number of dominant plant species. The WMVCS contains a few other primary indicators that can be used when wetland hydrology and hydric soils are present. These

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include morphological adaptations, wetland non-vascular plants, problematic hydrophytic vegetation, and the prevalence test. All of these indicators may be used if the dominance test fails. The prevalence test looks at the percentage of area covered by an individual plant species and weights them based on their indicator status. If the resulting number (U=Prevalence Index) is U<U3 then the vegetative layer is considered hydric. See formula below (USACE, 2010).

Equation 1. Prevalence index for determination of hydrophytic vegetation using Cowardin indicators, USACE.

$$\text{Prevalence Index (U)} = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

A = Summed percent coverage for each indicator status

3.4 Hydric Soils

Hydric soils are identified as soils that are subject to saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, 2006). The presence of hydric soils is determined based upon indicators found in the field. These indicators depend on what type of soil is present in the area and what region the area is in, according to the USACE Regional Supplement (USACE, 2010). For the Western Mountains, Valleys and Coast Region, these indicators include:

- Histosol
- Histic epipedon
- Black histic
- Hydrogen sulfide
- Depleted below dark surface
- Thick dark surface
- Sandy mucky mineral
- Sandy gleyed matrix
- Sandy redox
- Stripped matrix
- Loamy mucky mineral,
- Loamy gleyed matrix
- Depleted matrix
- Redox dark surface
- Depleted dark surface
- Redox depressions

Many of these indicators are signs of high organic content, oxygen depleted soil conditions, and saturation. Soils are observed from a 16 to 20-inch soil pit; in special cases, soil pits are dug down to 32" (Ecology, 1997 and USACE 2010). Hydric soil characteristics are examined just below the A-horizon or at 12-inches below the surface, whichever is shallower; color is determined from wetted samples using the Munsell Soil Color Chart.

3.5 Wetland Hydrology

Wetland hydrology is considered to be present when indicators of seasonal or permanent local water inundation are observed. The following indicators of hydrology are adapted from USACE WMVCS field observation methodology, the NRCS Hydric Soils List for the local County, and other publicly available data bases (Ecology 1997, USACE 1987, USDA 1992, and USACE 2010).

- Surface water
- Iron deposits

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- Hydrogen sulfide odor
- High water table
- Surface soil cracks
- FAC neutral test
- Saturation
- Frost-heave hummocks
- Presence of reduced iron
- Water marks
- Shallow aquitard
- Dry-season water table
- Sediment deposits
- Water stained leaves
- Stunted or stressed plants
- Drift deposits
- Salt crust
- Drainage patterns
- Algal mat or crust
- Aquatic invertebrates
- Raised ant mounds
- Geomorphic position
- Inundation/saturation visible on aerial imagery
- Recent iron reduction in tilled soils
- Oxidized rhizospheres along living roots
- Sparsely vegetated concave surfaces

3.6 Western Washington Wetland Rating System

Wetlands within the project area were assessed using the Washington State Wetland Rating System for Western Washington (Ecology 2004, Updated 2008). Ecology's rating system was developed to characterize wetlands based on their attributes, ecological and environmental functions, rarity, sensitivity to disturbance, and ability to be replaced (Ecology 2004, Updated 2008). Wetlands with high total functional scores are generally considered to be higher quality wetlands, provide higher ecological and/or environmental functions, are rare, more sensitive to disturbance, and harder to replace. The total functional value score is a combination of three groups of functions with about equal importance: improving water quality, hydrological functions, and wildlife habitat (Ecology 2004, Updated 2008). Water quality and hydrologic functions are both worth 32 possible points, while habitat functions have a maximum of 36 points. The highest quality wetlands are Category I wetlands and have a total functional value greater than 70 points based on a maximum possible score of 100 points. Category II wetlands are the next highest quality with total functional value scores from 51 to 69 points. Category III wetland have scores between 30 and 50, followed by Category IV, which is considered the poorest type of wetland, with scores below 30 (Ecology 2004, Updated 2008). Each of the three functional groups has intrinsic value; however, the habitat score is especially important for regulatory assessment. Ecology uses a combination of the overall category, habitat score, and development intensity to determine how large a buffer should be around the wetlands and what would be the appropriate mitigation ratio for impacts to the wetland.

A wetland can have either a high, medium, or low habitat score. A high scoring wetland will have a larger buffer than a wetland with a medium or low habitat score. A wetland with a habitat score of 29 or greater will be given a high level habitat buffer, 20-28 will be given a medium level buffer, and score less than 20 get a low level buffer.

Buffers are determined by a combination of the wetland category, the wetland-specific habitat score, and the land use intensity as determined by the San Juan Critical Area Ordinance (SJCAO 18.30.150).

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4 Site Investigation Results

4.1 General Site Description

The study parcel, totaling approximately 8-acres, is zoned RFF (Rural Farm/Forest). The property is bordered by properties with residences to the south and west, undeveloped land to the east, and by marine water to the north. An aerial photograph of the subject property and vicinity is provided in Figure 1. The subject property is currently covered by undeveloped forest land.

Jeff Ninnemann conducted site visits on February 13, 2012 and July 29, 2014, mapping and surveying the wetland areas on the subject property.

Two wetland areas (Wetland A and Wetland B) are located on or adjacent to the subject property. A ditch was identified that drains into Wetland A and Wetland B (a small spring) located on the beach just above the Ordinary High Water Mark (OHWM). A site map of the subject property and the associated wetlands is provided in Figure 2.

Wetland A is a scrub-shrub, depressional, seasonally flooded/saturated wetland located in the east-central portion of the property. Wetlands A receives hydrologic inputs from surface and groundwater flow from nearby upland areas, and from direct precipitation.

Wetland B is a scrub-shrub, depressional, seasonally flooded/saturated wetland located in the northeastern corner of the property. Wetland B receives water primarily from a groundwater seep at the toe of the beach bluff slope; however, surface water flow from nearby upland areas and direct precipitation also contribute to the hydrology of the wetland. During extreme high tides, the wetland is likely inundated with saltwater.

The ditch on the subject property was a linear structure that was clearly constructed by previous occupants, and may represent a failed attempt to drain a wetland area to the south. As a man-made structure, it is not considered a regulated stream and does not require a buffer.

4.2 Site Document Review

Multiple databases were consulted to review site characteristics and to provide background information prior to data collection in the field. Information obtained during the document review supported the following interpretations:

- National Wetlands Inventory did not indicate the presence of wetlands or other critical areas on the site.
- The San Juan County Critical Areas map showed a wetland in the east-central portion of the property.
- The property is not located on or adjacent to a Washington Wetland Natural Heritage Site as classified by the Washington State Department of Ecology (2008).
- The Forest Practice Application Review System (FPARS) supplied by the Washington State Department of Natural Resources through the ARCIMS mapping application was reviewed to determine characteristics of any stream systems in the vicinity. No streams were listed on the ARCIMS.

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4.3 Field Work Summary

The data used to determine vegetative communities, soil types, and the existence and type of hydrology present on site was collected on the *USACE Wetland Determination Data Form: Western Mountains, Valleys and Coast Supplement* (Appendix A). At the time of the July 2014 site visit, three soil pits were dug to identify the wetland areas and were described on the USACE data sheets (Figure 2 and Appendix A).

4.4 Vegetation

Vegetation on the site consisted of upland forest and wetland meadows.

Vegetation within the upland forested sections of the site consisted of a coniferous-dominated forest that included but was not limited to:

- Douglas fir (Pseudotsuga menziesii)
- Western red cedar (Thuja plicata)
- Grand fir (Abies grandis).

Shrubs within the forested portions of the property included:

- Trailing blackberry (*Rubus ursinus*)
- Tall Oregon grape (*Mahonia aquifolium*)
- Indian plum (*Oemleria cerasiformis*)
- Salal (*Gaultheria shallon*).

Herbaceous plants within the forested portions of the property were limited to bracken fern (*Pteridium aquilinum*) and sword fern (*Polystichum munitum*), but it is likely that other annual and perennial herbaceous plants occupy the area later in the growing season.

Vegetation in the wetland area of the parcel consisted of hydrophytic plants (FACW and OBL) and plants that can also survive in lower moisture settings (FAC and FACU). Two wetland areas (Wetlands A and B) were identified on the subject parcel.

Wetland A consisted of a shrub-scrub plant community, with large sections of un-vegetated bare earth. Few trees were actually growing within the wetland. Trees growing in the wetland were limited to western red cedar (*Thuja plicata*). The shrub layer consisted of salmonberry (*Rubus spectabilis*) and no plants were growing in the herbaceous layer.

Wetland B consisted of a shrub-scrub plant community with portions of unvegetated bare earth. No trees were actually growing within the wetland. The shrub layer consisted of:

- Salmonberry (Rubus spectabilis)
- Black hawthorn (Crataegus douglasii)
- Thimbleberry (Rubus parviflorus)
- Indian plum (Oemleria cerasiformis)

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- Snowberry (Symphoricarpos albus)
- Trailing blackberry (Rubus ursinus).

The herbaceous layer in Wetland B consisted of:

- Bracken fern (Pteridium aquilinum)
- Swordfern (Polystichum munitum)
- Water parsley (Oenanthe sarmentosa)
- Dewey sedge (Carex deweyana)
- Stinging nettles (Urtica dioica).

4.5 Soils

The San Juan County Soil Survey (Tabular Data Version 6, dated September 22, 2009) describes two soil types within the subject parcel: Beaches-Endoaquents, tidal-Xerorthents associated with 0 - 5 percent slopes, and Indianola loamy sand, with 3-15 percent slopes (Figure 4). Neither soil type is considered a hydric soil on the local soil survey. The soil textures found on the subject property appeared to match the soil survey data. Descriptions of the soils found within the wetland and upland areas are provided below.

Soils in the upland areas (represented by soil pit location SP8) appeared to match the county soil survey (Figure 4). Soils found in upland soil pits did not meet the criteria for hydric soils due to an absence of hydric indicators as described by Ecology and the USACE (USACE, 2008). Detailed descriptions are provided in the wetland data sheets included in Appendix A.

Soils in Wetlands A and B (represented by soil pit locations SP7 and SP9) were observed as hydric. Although the county soil survey listed the soil type as non-hydric, the soil textures did appear to match the soil survey description (Figure 4) for the study area. The soil in Wetland B was a silty loam. All wetland soils exhibited the USACE hydric indicators of depleted matrix (F3) and redox dark surface (F6) (Appendix A).

4.6 Hydrology

Wetland hydrology characteristics of seasonally flooded and/or saturated soils were observed in all test pits within the wetland areas. The overall movement of water on the property is from south to northeast, towards Seversons Bay. A map depicting the hydrologic flow within the subject area is presented in Figure 3.

Wetland A is a depressional wetland that is fed primarily by direct precipitation, surface water, groundwater flow, and a ditch conveying flow from a wetland to the south of the property. Wetland A and the wetland to the south of the property may influence, through groundwater flow, the recharge rate of a spring in Wetland B daylights on the property's beach just above the OHWM. Indicators of wetland hydrology were strong; the soil was saturated (A3), had a high water table (A2), and areas were inundated (A1) with approximately 4 inches of water.

Wetland B is a depressional wetland fed primarily by a groundwater seep at the toe of the shoreline bluff, with some additional inputs from direct precipitation and surface water. Indicators of wetland

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hydrology were strong, and included sparsely vegetated concave surfaces (B8) and oxidized rhizospheres along living roots (C3).

4.7 Washington State Wetland Rating System

The wetlands on the subject property were assessed using the Washington State Department of Ecology's wetland rating system (Ecology, 2008). National Wetlands Inventory maps and aerial photos were used to get a larger scale view of vegetation structures, hydroperiods, surrounding areas, and the wetland units as a whole. The worksheets used to determine the scores are presented in Appendix B. The habitat score, determined through the rating system, provides a numerical value that represents the wetland's ability to filter pollutants and improve water quality, prevent flooding and stream erosion, and enhance the quality, diversity, complexity, and connectivity of wildlife habitat.

Wetland A was determined to be a Category II wetland based on the Washington State Rating System total score of 55, a habitat score of 25, and a size of 5,900 square feet (0.16 acres) (SJCAO 18.30.150).

Wetland B was determined to be a Category II wetland based on the Washington State Rating System total score of 52, a habitat score of 26, and a size of 872 square feet (0.02 acres) (SJCAO 18.30.150).

5 Determination and Recommendations

5.1 Determination

Two wetland areas (Wetland A and Wetland B) exist on the subject property.

Wetland A was determined to be a San Juan County Category II wetland that occupies an area of approximately of 5,900 square feet (0.16 acres) on the subject property. Its classification was determined to be a PSSE (Palustrine, Shrub-Scrub, Seasonally Flooded/Saturated) depressional wetland (Cowardin et al. 1979). Wetland A meets the size requirements for a jurisdictional wetland within San Juan County and will be regulated as such. Wetland A receives a 150, 225, or a 300-foot buffer, depending on land use intensity as indicated in the San Juan County Critical Area Ordinance (SJCAO 18.30.150).

Wetland B was determined to be a San Juan County Category II wetland that occupies an area of approximately of 872 square feet (0.02 acres) on the subject property. Its classification was determined to be a PSSE (Palustrine, Shrub-Scrub, Seasonally Flooded/Saturated) depressional wetland (Cowardin et al. 1979). Wetland B does not meet the size requirements for a jurisdictional wetland within San Juan County; therefore, no buffer is required. However, any activity which may impact the wetland directly will require San Juan County, Ecology, and USACE permits and approval.

Table 1: Wetland habitat score and buffer width.

Wetland	Habitat Score	Total Score	Category	Wetland Size (Square feet)	Buffer Width (ft.)
A	25	55	II	5,900	150/225/300
B	26	52	II	872	none

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A portion of the property is also within 200 feet of the ordinary high water mark (OHWM) of Severson's Bay, which is part of the Puget Sound and is therefore a regulated Water of the State of Washington. The delineated wetlands are the only aquatic critical areas located on the subject property. The ditch found on the property was a man-made structure, and as such is not regulated as a stream or critical area. The spring on the property is approximately eight feet by eight feet, and is a location where groundwater comes to the surface as it flows through sandy soils. After surfacing, the water then infiltrates back into the soil and continues towards the marine waters to the north as groundwater. The spring does not have the features of a stream, and is not large enough to be a jurisdictional wetland.

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6 Limitations

We have used the most current, established methods to make determinations regarding the location, size, and type of wetland present on the aforementioned parcels. All of the preceding 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.

This report was prepared for Christine Johnson and C. Terrigal Burn by:

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Figure 1: Johnson & Burns Wetland Project Vicinity Map

Figure 2: Johnson & Burns Wetland, Soil Pits, and Buffers Map.

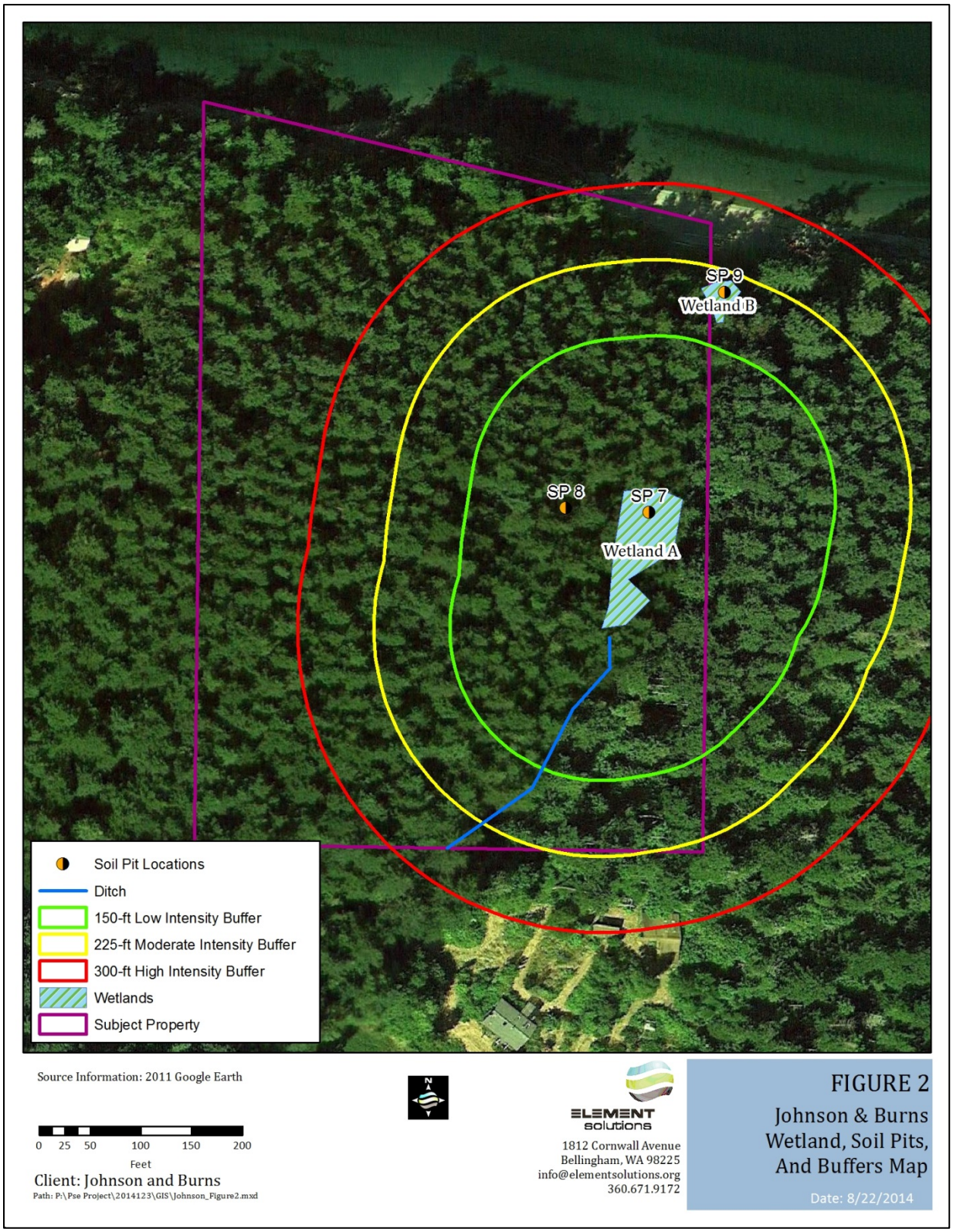


Figure 3: Johnson & Burns Wetland Project Hydrologic Flow Direction.

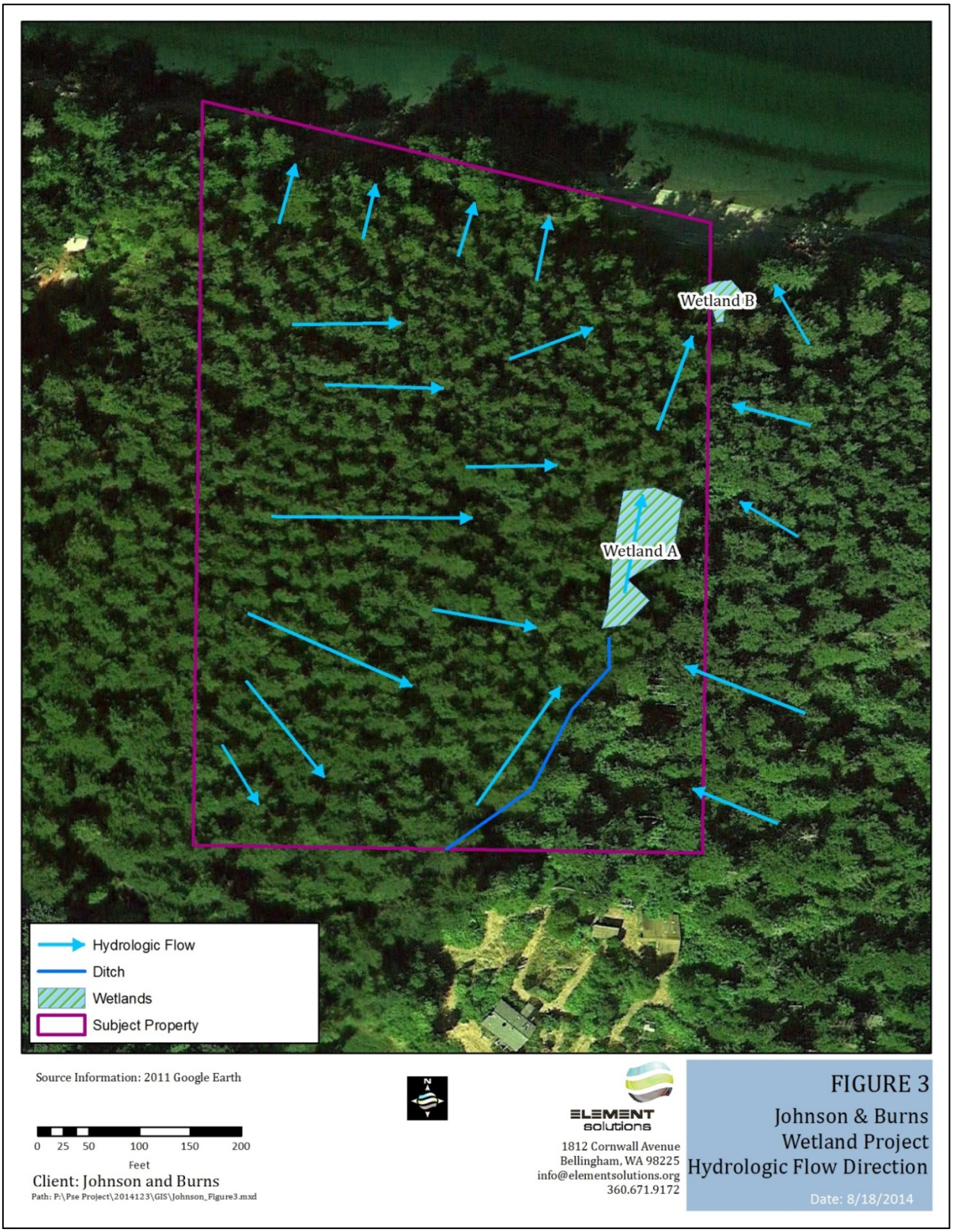


Figure 4: Johnson & Burns Wetland Project San Juan County Soil Survey Map

Figure 5: Johnson & Burns Wetland Project San Juan County Soil Survey Map

Appendix A: Wetland Soil Pit Data Sheets

Appendix B: Western Washington Wetland Rating Sheets

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

Project Site:	Parcel #371112001	Sampling Date:	2/13/2012
Applicant/Owner:	Christine Johnson and C Terrigal Burn	Sampling Point:	SP7
Investigator:	J. Ninnemann	City/County:	Waldron Island/San Juan
Section, Township, Range:	11/37/3W	State:	WA
Landform (hillslope, terrace, etc)	Slope (%)	Local relief (concave, convex, none)	
Subregion (LRR) LRRA MLRA2	Lat	Long	Datum
Soil Map Unit Name Limepoint-Sholander complex		NWI classification	

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is this Sampling Point within a Wetland? ☒ Yes ☐ No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 30'_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. THPL	10	N	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size 30'_____)			
1. RUSP	20	Y	FAC
2.			
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size 30')			
1. Moss	10	N	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

Y	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point** SP7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					Silty loam	
7-15	10YR 4/2	70	10YR 8/4	5	C	M	Silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☒ Surface water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations

Surface Water Present?	☒	Yes	☐	No	Depth (in):	1
Water Table Present?	☒	Yes	☐	No	Depth (in):	0
Saturation Present? (includes capillary fringe)	☒	Yes	☐	No	Depth (in):	0

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

Project Site:	Parcel #371112001	Sampling Date:	2/13/2012
Applicant/Owner:	Christine Johnson and C Terrigal Burn	Sampling Point:	SP8
Investigator:	J. Ninnemann	City/County:	Waldron Island/San Juan
Section, Township, Range:	11/37/3W	State:	WA
Landform (hillslope, terrace, etc)	Slope (%)	Local relief (concave, convex, none)	
Subregion (LRR)	Lat	Long	Datum
Soil Map Unit Name		NWI classification	

Are climatic/hydrologic conditions on the site typical for this time of year? ☐ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☐ Yes ☐ No
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☒ No	**Is this Sampling Point within a Wetland?**	☐ Yes	☒ No
Hydric Soils Present?	☐ Yes	☒ No			
Wetland Hydrology Present?	☐ Yes	☒ No			

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. PSME	35	Y	FAC
2. THPL	35	Y	FAC
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size 30')			
1. GASH	25	Y	FACU
2. RUUR	35	Y	FACU
3. THPL	10	N	FAC
4. OECE	5	N	FACU
5. MAAQ	5	N	FACU
	80	= Total Cover	
Herb Stratum (Plot size 30')			
1. POMU	25	Y	FACU
2. PTAQ	15	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
Woody Vine Stratum (Plot size 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index Worksheet

	Total % Cover of	Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

N	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL **Sampling Point** SP8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/3	100					Silt loam	
7-15	10YR ¾	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA** 1**)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric soil present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations

Surface Water Present?	☐	Yes	☒	No	Depth (in):
Water Table Present?	☐	Yes	☒	No	Depth (in):
Saturation Present? (includes capillary fringe)	☐	Yes	☒	No	Depth (in):

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM

Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

Project Site:	Parcel #371112001	Sampling Date:	7/29/2014
Applicant/Owner:	Christine Johnson and C Terrigal Burn	Sampling Point:	SP9
Investigator:	J. Ninnemann	City/County:	Waldron Island/San Juan
Section, Township, Range:	11/37/3W	State:	WA
Landform (hillslope, terrace, etc)	Slope (%)	Local relief (concave, convex, none)	
Subregion (LRR) LRRA MLRA2	Lat	Long	Datum
Soil Map Unit Name Limepoint-Sholander complex		NWI classification	

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks.)
Are "Normal Circumstances" present on the site? ☒ Yes ☐ No
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil, ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is this Sampling Point within a Wetland? ☒ Yes ☐ No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 30'_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. black hawthorn (Crataegus douglasii)	80	Y	FAC
2.			
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size 30'_____)			
1. salmonberry (Rubus spectabilis)	25	Y	FAC
2. trailing blackberry (Rubus ursinus)	10	N	FACU
3. thimbleberry (Rubus parviflorus)	10	N	FACU
4. indian plum (Oemleria cerasiformis)	5	N	FACU
5. snowberry (Symphoricarpos albus)	15	N	FACU
	65	= Total Cover	
Herb Stratum (Plot size 30')			
1. Moss	10	N	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 25

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet

Total % Cover of		Multiply by
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column totals	(A)	(B)

Prevalence Index = B / A =

Hydrophytic Vegetation Indicators

Y	Dominance test is > 50%
	Prevalence test is ≤ 3.0 *
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
	Wetland Non-Vascular Plants *
	Problematic Hydrophytic Vegetation * (explain)

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL **Sampling Point** SP9

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/1	100					Sandy Silty Loam	
7-10	10YR 3/1	97	10 YR 3/3	3	C	M	Sandy Silty Loam	
10-15	10YR 2/1	95	10 YR 3/3	5	C	M	Sandy Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Loc: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)
- ☐

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric soil present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply):

- ☐ Surface water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☒ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required):

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations

Surface Water Present?	☐	Yes	☒	No	Depth (in):	0
Water Table Present?	☐	Yes	☒	No	Depth (in):	0
Saturation Present? (includes capillary fringe)	☐	Yes	☒	No	Depth (in):	0

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Wetland name or number Wetland A

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): Johnson Wetland A Date of site visit: July 29, 2014

Rated by: Jeff Ninnemann Trained by Ecology? YesX No Date of training: May 2008

SEC: 11 TWNSHP: 37N RNGE: 3W Is S/T/R in Appendix D? Yes No X

Map of wetland unit: Figure 2 Estimated size 5,900 SF

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I II X III IV

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

Score for Water Quality Functions	20
Score for Hydrologic Functions	10
Score for Habitat Functions	25
TOTAL Score for Functions	55

Category based on SPECIAL CHARACTERISTCS of Wetland I II Does not apply X

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

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics	
Estuarine	
Natural Heritage Wetland	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

Wetland HGM Class used for Rating	
Depressional	**X**
Riverine	
Lake-fringe	
Slope	
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

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

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

The hydrogeomorphic classification groups wetlands in to 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.

Wetland name or number Wetland A_____

Classification of Vegetated Wetlands for 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 a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call 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 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 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) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   _____ The wetland is on a slope *(slope can be very gradual)*.
   _____ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   _____ The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

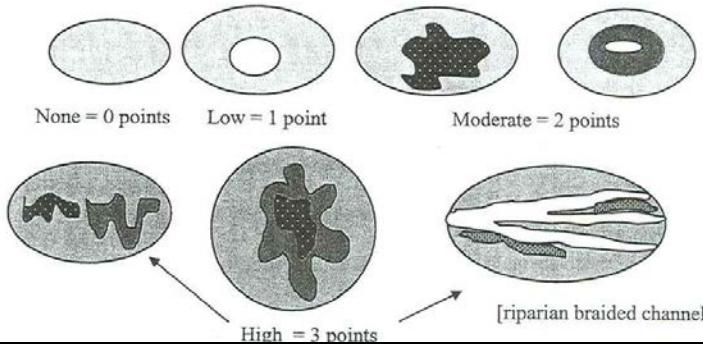
Wetland name or number Wetland A

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	**Does the wetland have the potential to improve water quality?**	*(see p.38)*
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)..... points = 3 • Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2 • Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) ..... points = 1 • Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch..... points = 1 *(If ditch is not permanently flowing treat unit as "intermittently flowing")* **Provide photo or drawing**	**Figure 4 3**
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (*use NRCS definitions*) YES points = 4 NO points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area..... points = 5 • Wetland has persistent, ungrazed vegetation > = 1/2 of area..... points = 3 • Wetland has persistent, ungrazed vegetation > = 1/10 of area..... points = 1 • Wetland has persistent, ungrazed vegetation < 1/10 of area..... points = 0 **Map of Cowardin vegetation classes**	**Figure ___ 3**
	D 1.4 Characteristics of seasonal ponding or inundation: *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.* • Area seasonally ponded is > 1/2 total area of wetland ..... points = 4 • Area seasonally ponded is > 1/4 total area of wetland ..... points = 2 • Area seasonally ponded is < 1/4 total area of wetland ..... points = 0 **Map of Hydroperiods**	**Figure ___ 4**
	Total for D 1 *Add the points in the boxes above*	10
D 2	**Does the wetland have the opportunity to improve water quality?**	*(see p. 44)*
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ___ Grazing in the wetland or within 150 ft ___ Untreated stormwater discharges to wetland ___ Tilled fields or orchards within 150 ft. of wetland X A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ___ Residential, urban areas, golf courses are within 150 ft. of wetland ___ Wetland is fed by groundwater high in phosphorus or nitrogen ___ Other _____ YES multiplier is 2 NO multiplier is 1	Multiplier 2
◆	**TOTAL – Water Quality Functions** Multiply the score from D1 by D2; then ***add score to table on p. 1***	20
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	**Does the wetland have the potential to reduce flooding and erosion?**	*(see p.46)*
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)..... points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch..... points = 1 *(If ditch is not permanently flowing treat unit as "intermittently flowing")* • Unit has an unconstricted, or slightly constricted, surface outlet *(permanently flowing)* ..... points = 0	4
	D 3.2 Depth of storage during wet periods. *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7 • The wetland is a "headwater" wetland..... points = 5 • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet..... points = 5 • Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet..... points = 3 • Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 • Marks of ponding less than 0.5 ft..... points = 0	3
	D 3.3 Contribution of wetland unit to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* • The area of the basin is less than 10 times the area of unit ..... points = 5 • The area of the basin is 10 to 100 times the area of the unit ..... points = 3 • The area of the basin is more than 100 times the area of the unit..... points = 0 • Entire unit is in the FLATS class ..... points = 5	3
	Total for D 3 *Add the points in the boxes above*	10

D 4	**Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. *Note which of the following indicators of opportunity apply.* ____ Wetland is in a headwater of a river or stream that has flooding problems. ____ Wetland drains to a river or stream that has flooding problems ____ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems ____ Other _____ YES multiplier is 2 NO multiplier is 1	*(see p. 49)* Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***add score to table on p. 1***	10

Comments:

Wetland name or number Wetland A

These questions apply to wetlands of all HGM classes.		**Points**
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	**Does the wetland have the <u>potential</u> to provide habitat for many species?**	
	H 1.1 <u>Vegetation structure</u> *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ___ Aquatic Bed x___ Emergent plants x___ Scrub/shrub (areas where shrubs have > 30% cover) ___ Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ___ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* **Map of Cowardin vegetation classes** 4 structures or more..... points = 4 — 3 structures..... points = 2 2 structures..... points = 1 — 1 structure ..... points = 0	**Figure ___** **1**
	H 1.2 <u>Hydroperiods</u> *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ___ Permanently flooded or inundated — 4 or more types present points = 3 X___ Seasonally flooded or inundated — 3 or more types present.....points = 2 ___ Occasionally flooded or inundated — 2 types present.....points = 1 X___ Saturated only — 1 type present .....points = 0 ___ Permanently flowing stream or river in, or adjacent to, the wetland ___ Seasonally flowing stream in, or adjacent to, the wetland ___ **Lake-fringe wetland..... = 2 points** ___ **Freshwater tidal wetland..... = 2 points** **Map of hydroperiods**	**Figure ___** **1**
	H 1.3 <u>Richness of Plant Species</u> *(see p. 75)*: Count the number of plant species in the wetland that cover at least 10 ft^2 *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.* If you counted: > 19 species ..... points = 2 5 – 19 species..... points = 1 List species below if you want to: < 5 species ..... points = 0 _____ _____ _____ _____	1
	H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** **2**
	H 1.5 <u>Special Habitat Features</u> *(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 (> 4 in. 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 (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* X___ At least 1/4 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)* X___ Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	2
	H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	7

Wetland name or number Wetland A

H 2	**Does the wetland have the <u>opportunity</u> to provide habitat for many species?**	(only 1 score per box)
	H 2.1 <u>Buffers</u> *(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".* ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... **points = 5** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... **points = 4** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference..... **points = 4** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... **points = 3** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference ..... **points = 3** **If buffer does not meet any of the criteria above:** ____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK ..... **points = 2** ____ No paved areas of 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 (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... **points = 0** ____ Buffer does not meet any of the criteria above ..... **points = 1** **Arial photo showing buffers**	**Figure ___** **5**
	H 2.2 <u>Corridors and Connections</u> *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).* YES = **4 points** (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. 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 H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point • Within 1 mile of a lake greater than 20 acres? NO = 0 points	4

Comments:

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)* Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.* ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre). ____ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*). ____ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock. __X__ **Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. **(**Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. ____ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*). ____ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*). ____ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. __X__ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).* ____ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. __X__ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ____ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. __X__ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has **3 or more** priority habitats = **4 points** If wetland has **2** priority habitats = **3 points** If wetland has **1** priority habitat **= 1 point** No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	4
	H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)* • There are at least 3 other wetlands within 1/2 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 1/2 mile .....points = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .....points = 3 • The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3 • There is at least 1 wetland within 1/2 mile .....points = 2 • There are no wetlands within 1/2 mile.....points = 0	5
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	18
	TOTAL for H 1 from page 8	7
◆	**Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1***	25

Comments:

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**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 1.1 NO _____	
	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? YES = Category I NO = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site _____ 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 a site with state threatened or endangered plant species? YES = Category 1 NO _____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland **(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 function.*** 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 soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 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 question 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. 4. 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*)? YES = Category I NO = Is not a bog for purpose of rating	**Cat. I**

Wetland name or number Wetland A_____

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland 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 function.* ____ **Old-growth forests**: (west of Cascade Crest) Stands of at least two three 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 an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. YES = Category I NO = _____ not a forested wetland with special characteristics	**Cat. I**
SC5	**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 meet all of the following three conditions? ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) YES = Category I NO = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland 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 one acre or larger? YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered NO for all types enter "Not Applicable" on p. 1	

Comments:

Wetland name or number Wetland B

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): Johnson Wetland B Date of site visit: July 29, 2014

Rated by: Jeff Ninnemann Trained by Ecology? YesX No Date of training: May 2008

SEC: 11 TWNSHP: 37N RNGE: 3W Is S/T/R in Appendix D? Yes No X

Map of wetland unit: Figure 2 Estimated size 872 SF

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I II X III IV

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

Score for Water Quality Functions	12
Score for Hydrologic Functions	14
Score for Habitat Functions	26
TOTAL Score for Functions	52

Category based on SPECIAL CHARACTERISTCS of Wetland I II Does not apply X

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

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics	
Estuarine	
Natural Heritage Wetland	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

Wetland HGM Class used for Rating	
Depressional	**X**
Riverine	
Lake-fringe	
Slope	
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

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

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

The hydrogeomorphic classification groups wetlands in to 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.

Wetland name or number Wetland B _____

Classification of Vegetated Wetlands for 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 a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call 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 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 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) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   _____ The wetland is on a slope *(slope can be very gradual)*.
   _____ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   _____ The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within 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 you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

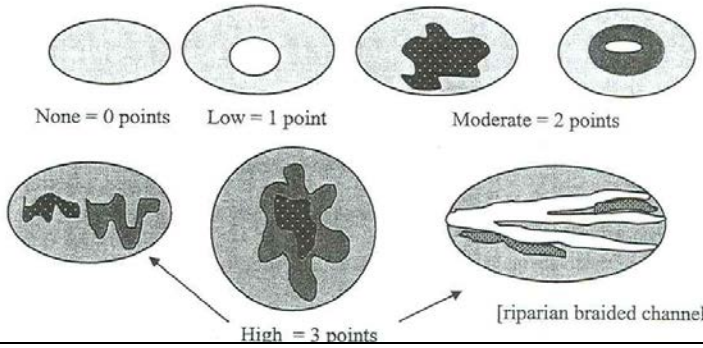
Wetland name or number Wetland B

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	**Does the wetland have the potential to improve water quality?**	*(see p.38)*
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)..... points = 3 • Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ..... points = 2 • Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) ..... points = 1 • Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch..... points = 1 *(If ditch is not permanently flowing treat unit as "intermittently flowing")* **Provide photo or drawing**	**Figure 4 3**
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (*use NRCS definitions*) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area..... points = 5 • Wetland has persistent, ungrazed vegetation > = 1/2 of area..... points = 3 • Wetland has persistent, ungrazed vegetation > = 1/10 of area..... points = 1 • Wetland has persistent, ungrazed vegetation < 1/10 of area..... points = 0 **Map of Cowardin vegetation classes**	**Figure ___ 5**
	D 1.4 Characteristics of seasonal ponding or inundation: *This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.* • Area seasonally ponded is > 1/2 total area of wetland ..... points = 4 • Area seasonally ponded is > 1/4 total area of wetland ..... points = 2 • Area seasonally ponded is < 1/4 total area of wetland ..... points = 0 **Map of Hydroperiods**	**Figure ___ 4**
	Total for D 1 *Add the points in the boxes above*	12
D 2	**Does the wetland have the opportunity to improve water quality?**	*(see p. 44)*
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ____ Grazing in the wetland or within 150 ft ____ Untreated stormwater discharges to wetland ____ Tilled fields or orchards within 150 ft. of wetland ____ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ____ Residential, urban areas, golf courses are within 150 ft. of wetland ____ Wetland is fed by groundwater high in phosphorus or nitrogen ____ Other _____ YES multiplier is 2 NO multiplier is 1	Multiplier 1
◆	**TOTAL – Water Quality Functions** Multiply the score from D1 by D2; then ***add score to table on p. 1***	12
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	**Does the wetland have the potential to reduce flooding and erosion?**	*(see p.46)*
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)..... points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet ..... points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch..... points = 1 *(If ditch is not permanently flowing treat unit as "intermittently flowing")* • Unit has an unconstricted, or slightly constricted, surface outlet *(permanently flowing)* ..... points = 0	4
	D 3.2 Depth of storage during wet periods. *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet ..... points = 7 • The wetland is a "headwater" wetland..... points = 5 • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet..... points = 5 • Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet..... points = 3 • Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 • Marks of ponding less than 0.5 ft..... points = 0	5
	D 3.3 Contribution of wetland unit to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* • The area of the basin is less than 10 times the area of unit ..... points = 5 • The area of the basin is 10 to 100 times the area of the unit ..... points = 3 • The area of the basin is more than 100 times the area of the unit..... points = 0 • Entire unit is in the FLATS class ..... points = 5	5
	Total for D 3 *Add the points in the boxes above*	14

D 4	**Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?**	*(see p. 49)*
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. *Note which of the following indicators of opportunity apply.* ____ Wetland is in a headwater of a river or stream that has flooding problems. ____ Wetland drains to a river or stream that has flooding problems ____ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems ____ Other _____ YES multiplier is 2 NO multiplier is 1	Multiplier 1
◆	**<u>TOTAL</u> – Hydrologic Functions** Multiply the score from D3 by D4; then ***add score to table on p. 1***	12

Comments:

Wetland name or number Wetland B

These questions apply to wetlands of all HGM classes.		**Points** (only 1 score per box)
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	
H 1	**Does the wetland have the potential to provide habitat for many species?**	
	H 1.1 Vegetation structure *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ___ Aquatic Bed x Emergent plants x Scrub/shrub (areas where shrubs have > 30% cover) ___ Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ___ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* **Map of Cowardin vegetation classes** 4 structures or more..... points = 4 — 3 structures..... points = 2 2 structures..... points = 1 — 1 structure ..... points = 0	**Figure ___** **1**
	H 1.2 Hydroperiods *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ___ Permanently flooded or inundated — 4 or more types present points = 3 X Seasonally flooded or inundated — 3 or more types present.....points = 2 ___ Occasionally flooded or inundated — 2 types present.....points = 1 X Saturated only — 1 type present .....points = 0 ___ Permanently flowing stream or river in, or adjacent to, the wetland X Seasonally flowing stream in, or adjacent to, the wetland ___ **Lake-fringe wetland..... = 2 points** ___ **Freshwater tidal wetland..... = 2 points** **Map of hydroperiods**	**Figure ___** **2**
	H 1.3 Richness of Plant Species *(see p. 75)*: Count the number of plant species in the wetland that cover at least 10 ft^2 *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle.* If you counted: > 19 species ..... points = 2 5 – 19 species..... points = 1 List species below if you want to: < 5 species ..... points = 0 _____ _____ _____ _____	1
	H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** **2**
	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 (> 4 in. 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) X Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ___ At least 1/4 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)* X Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	2
	H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	8

H 2	**Does the wetland have the <u>opportunity</u> to provide habitat for many species?**	(only 1 score per box)
	H 2.1 <u>Buffers</u> *(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".* ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)..... **points = 5** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... **points = 4** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference..... **points = 4** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... **points = 3** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference ..... **points = 3** **If buffer does not meet any of the criteria above:** ____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK ..... **points = 2** ____ No paved areas of 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 (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... **points = 0** ____ Buffer does not meet any of the criteria above ..... **points = 1** **Arial photo showing buffers**	**Figure ___** **5**
	H 2.2 <u>Corridors and Connections</u> *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).* YES = **4 points** (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. 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 H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point • Within 1 mile of a lake greater than 20 acres? NO = 0 points	4

Comments:

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): *(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)* Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.* ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre). __X__ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*). ____ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock. __X__ **Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. **(**Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. ____ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*). ____ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*). ____ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. __X__ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).* ____ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. __X__ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ____ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. __X__ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has **3 or more** priority habitats = **4 points** If wetland has **2** priority habitats = **3 points** If wetland has **1** priority habitat **= 1 point** No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	4
	H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)* • There are at least 3 other wetlands within 1/2 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 1/2 mile .....points = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .....points = 3 • The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 3 • There is at least 1 wetland within 1/2 mile .....points = 2 • There are no wetlands within 1/2 mile.....points = 0	5
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	18
	TOTAL for H 1 from page 8	8
◆	**Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1***	26

Comments:

Wetland name or number Wetland B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**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 1.1 NO _____	
	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? YES = Category I NO = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site _____ 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 a site with state threatened or endangered plant species? YES = Category 1 NO _____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland **(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 function.*** 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 soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 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 question 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. 4. 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*)? YES = Category I NO = Is not a bog for purpose of rating	**Cat. I**

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland 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 function.* ____ **Old-growth forests**: (west of Cascade Crest) Stands of at least two three 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 an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. YES = Category I NO = ____ not a forested wetland with special characteristics	**Cat. I**
SC5	**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 meet all of the following three conditions? ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) YES = Category I NO = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland 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 one acre or larger? YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered NO for all types enter "Not Applicable" on p. 1	

Comments: