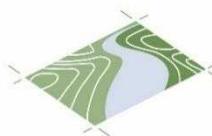


WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

PHO REBUILD

APRIL 2022



**Soundview
Consultants**
Environmental Assessment
Planning + Land Use Solutions

WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

PHO REBUILD

APRIL 28, 2022

PROJECT LOCATION
4492 MERIDIAN STREET
BELLINGHAM, WASHINGTON 98226

PREPARED FOR
CREDO CONSTRUCTION
4174 PACIFIC HIGHWAY
BELLINGHAM, WASHINGTON 98226

PREPARED BY
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**Soundview
Consultants**
Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) has been assisting Credo Construction (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment for a proposed commercial redevelopment of a 1.79-acre property located at 4492 Meridian Street within the City of Bellingham, Whatcom County, Washington. The subject property consists of one parcel situated in the Northwest 1/4 of Section 7, Township 38 North, Range 2 East, W.M. (Whatcom County Tax Parcel Number 3803070325200000).

SVC investigated the subject property for the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species in March of 2022. Using current methodology, the site investigation identified one potentially-regulated wetland (Wetland A) on the subject property. In addition, three potentially regulated offsite wetlands (Wetlands 1 - 3) were identified offsite to the south, east and north. Per Bellingham Municipal Code (BMC) 16.55.340(B), Wetlands A, 1 and 2 are classified as a Category IV wetlands subject to standard 50-foot buffers based on the proposed high intensity land use. Wetland 2 is classified as a Category III wetland with a moderate habitat score of 5 points subject to a standard 150-foot buffer based on the proposed high intensity land use. However, buffers from Wetlands 1 - 3 are not anticipated to project onto the site due to the distance from the property boundary and the presence of established roadways which interrupt the buffer functions per BMC 16.55.340.B. An additional 15-foot building setback is required from the edge of all wetland buffers per BMC 16.55.340(G). No other potentially-regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified within 150 feet of the subject property.

The Applicant proposes the redevelopment of the existing commercial building onsite. The subject property is partially developed with an existing and ongoing commercial restaurant, impervious surfaces, and associated infrastructure that were originally constructed prior to the implementation of the critical areas regulations under the Growth Management Act. However, the site now contains a wetland and associated buffer adjacent to the existing infrastructure. As such, the developed portions of the subject property are existing and ongoing nonconforming uses per BMC 16.55.130. The wetland buffer is functionally interrupted by the existing non-conforming development and impervious surfaces; therefore, the buffer for Wetland A terminates at the existing edge of pavement/substantial development onsite. The replacement of the existing commercial building is allowed per BMC 16.55.130.C.2, as long as the new structure will not further impact critical areas or buffers per BMC 16.55.130.B. All project details, proposed impacts, necessary code analytics, and mitigation strategy will be outlined in a Conceptual Mitigation Plan under separate cover.

The table below identifies the onsite critical areas and summarizes the potential regulatory status by local, state, and federal agencies.

Wetland Name	Size Onsite	Category/ Type ¹	Regulated Under BMC Chapter 16.55	Regulated Under RCW 90.48	Regulated Under Clean Water Act
Wetland A	5,420 SF	IV	Yes	Yes	Not Likely
Offsite Wetland 1	N/A - Offsite	IV	Yes	Yes	Not Likely
Offsite Wetland 2	N/A - Offsite	IV	Yes	Yes	Not Likely
Offsite Wetland 3	N/A - Offsite	III	Yes	Yes	Likely

Note:

1. Current Washington State Department of Ecology (WSDOE) wetland rating system (Hruby, 2014) per BMC 16.55.280.

Site Map

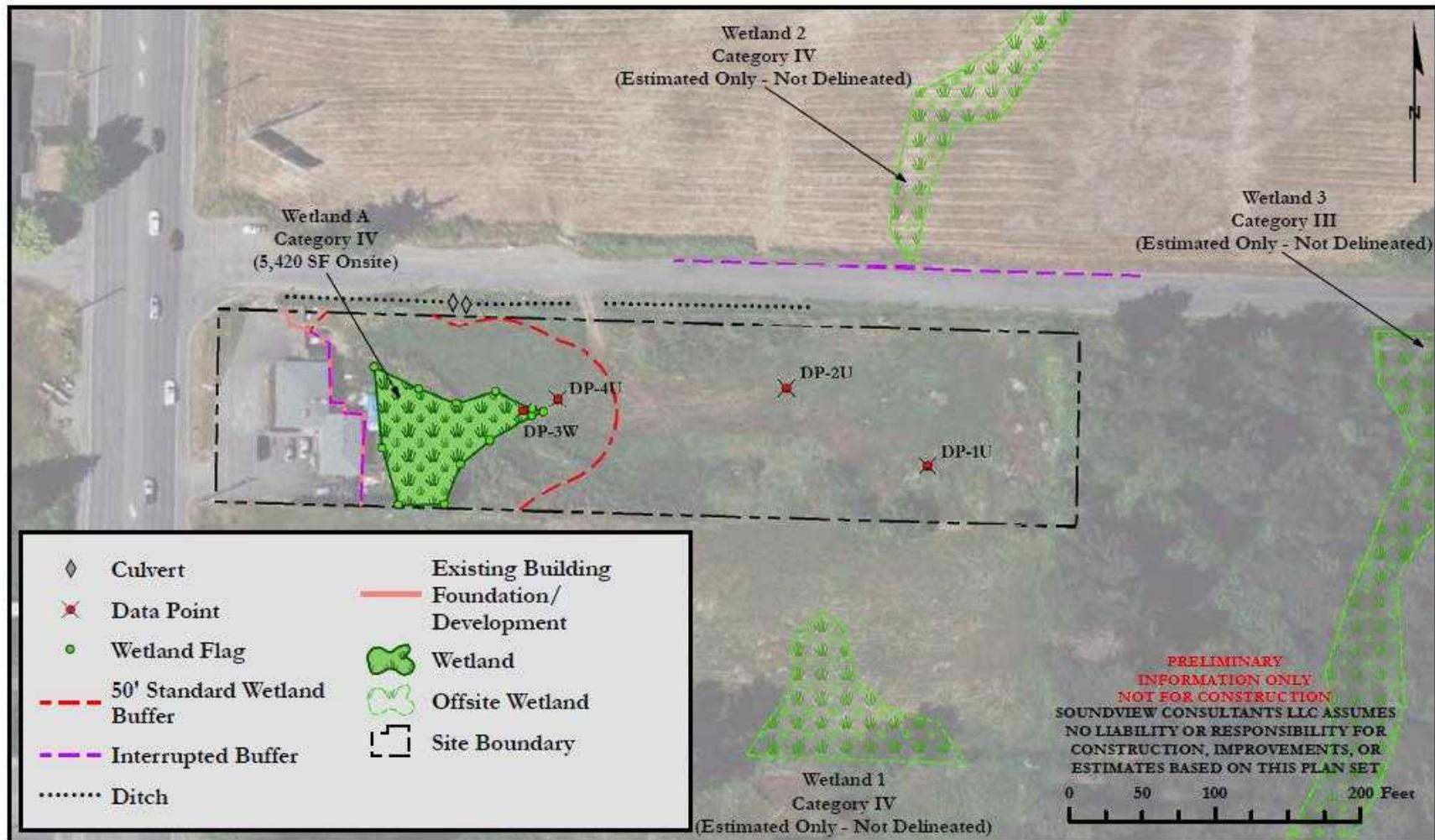


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- Appendix B -- Background Information
- Appendix C -- Existing Conditions Exhibit
- Appendix D -- Data Forms
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- Appendix F -- Wetland Rating Figures
- Appendix G -- Site Photographs
- Appendix H -- NES Wetland Delineation Report (2013)
- Appendix I -- Qualifications

Chapter 1. Introduction

Soundview Consultants LLC (SVC) has been assisting Credo Construction (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment for a proposed commercial development of a 1.79-acre property located at 4492 Meridian Street within the City of Bellingham, Whatcom County, Washington. The subject property consists of one parcel situated in the Northwest ¼ of Section 7, Township 38 North, Range 2 East, W.M. (Whatcom County Tax Parcel Number 3803070325200000).

The purpose of this wetland, and fish and wildlife habitat assessment plan is to identify the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species on or near the subject site. All project details, proposed impacts, necessary code analytics, and mitigation strategy will be outlined in a Conceptual Mitigation Plan under separate cover.

This report provides conclusions and recommendations regarding:

- Site description and area of assessment;
- Background research and identification of potentially-regulated critical areas within the vicinity of the proposed project;
- Identification and assessment of potentially-regulated wetlands and other aquatic features;
- Identification and assessment of potentially-regulated fish and wildlife habitat;
- Existing site map detailing identified critical areas and standard buffers and setbacks; and
- Supplemental information necessary for local regulatory review.

Chapter 2. Project Location

2.1 Project Location

The subject property consists of a 1.79-acre property located at 4492 Meridian Street within the City of Bellingham, Whatcom County, Washington. The subject property consists of one parcel situated in the Northwest ¼ of Section 7, Township 38 North, Range 2 East, W.M. (Whatcom County Tax Parcel Number 3803070325200000).

To access the subject site from Interstate-5 North from the Bellingham area, take exit 256 for WA-539 North/Meridian Street. Continue for 0.3 mile and keep right at the fork, following signs for WA_539 North/Lynden/Sumas/Whatcom Community College and merge onto WA-539 North/Guide Meridian/Meridian Street. After 1.4 mile, the subject property will be located on the right.

Figure 1. Vicinity Map.



Chapter 3. Methods

SVC investigated, delineated, and assessed any potentially-regulated wetlands, drainages, and other fish and wildlife habitat on and within 150 feet of the subject property in March of 2022. All determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geological Survey (USGS) topographic maps, National Resource Conservation Service (NRCS) soil survey, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Washington State Department of Natural Resources (DNR) water typing system, Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and SalmonScape mapping tools, Whatcom County and City of Bellingham Geographic Information Systems (GIS) data, and various orthophotographic resources (Appendix B). Appendix A contains further details for the methods and tools used to prepare this report.

Wetland boundaries were determined using the routine approach described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and modified according to the guidelines established in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE, 2010) and *Field Indicators of Hydric Soils in the United States* (NRCS, 2018). Qualified wetland scientists marked the boundary of the onsite wetland with orange surveyor's flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP-1 to DP-4). Offsite critical areas were not flagged; however, offsite features are estimated based on visual observations, aerial maps, and topography, and features labeled numerically beginning with 1. Additional test pits were excavated at regular intervals inside and outside of the wetland boundaries to further confirm the delineations.

Wetlands were classified using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979; Federal Geographic Data Committee, 2013) classification systems. Following classification and assessment, the wetland was rated and categorized using the *Washington State Wetlands Rating System for Western Washington—Washington Department of Ecology, 2014, Publication No. 04-06-029*, per BMC 16.55.280.

The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. The experienced biologists made visual and auditory observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features and direct and indirect signs of fish and wildlife activity (e.g. nesting, foraging, and migration/movement). Special attention was given to assessing the presence of fish and wildlife habitat conservation areas outlined under BMC 16.55.470.A. Potential watercourses were assessed using the stream typing definitions outlined in WAC 222-16-030 per BMC 16.55.470.A.4.

Chapter 4. Existing Conditions

4.1 Landscape Setting

The 1.79-acre subject property is located in a commercial/residential interface in the City of Bellingham, Whatcom County, Washington (Figure 2). The majority of the site is undeveloped with the exception of a commercial restaurant building and associated infrastructure on the western portion of the site. The subject property abuts Van Wyck Road to the north, undeveloped forested areas to the east, a single-family residence to the south, and Highway 539 to the west.

Topography on the subject property slopes gently approximately 10 feet from the north to south/southeast, with elevations ranging between 206 feet above mean sea level (amsl) to 216 feet amsl. A Topographic map is provided in Appendix B1.

Figure 2. Aerial Image of the Subject Property.



4.2 Soils

The NRCS Soil Survey of Whatcom County, Washington identifies one soil series on the subject property: Whatcom-Labounty silt loams, 0 to 8 percent slopes. A soil map is provided in Appendix B2. Below is a detailed description of the soil profile.

Whatcom-Labounty silt loams, 0 to 8 percent slopes (182)

Whatcom-Labounty silt loams, 0 to 8 percent slopes (182) soil series are formed on glaciomarine drift plains that are hummocky. The unit is intricately intermingled of 55 percent Whatcom silt loam and 24 percent Labounty silt loam. In a typical profile, the Whatcom silt loam surface layer is dark brown, ashy silt loam 9 inches thick. The upper 7 inches of the subsoil is dark brown silt loam. The lower 10 inches of the subsoil is light olive brown, mottled loam. Whatcom silt loam is moderately well drained. In a typical profile of Labounty silt loam, the surface layer is very dark grayish brown silt loam 10 inches thick. The subsoil varies in color from grayish brown and lightish brownish gray, mottled loam to grayish brown, olive gray, and light olive gray, mottled loam and is about 25 inches thick. Labounty silt loam is poorly drained. Whatcom-Labounty silt loams, 0 to 8 percent slopes is listed as non-hydric on the NRCS hydric soils list but may contain as much as 42 percent hydric inclusions of Labounty, Bellingham, and Shalcar soils (NRCS, n.d.).

4.3 Vegetation

Vegetation found within upland areas on the subject property was dominated by non-native invasive common tansy (*Tanacetum vulgare*), non-native invasive poison hemlock (*Conium maculatum*), non-native invasive Fuller's teasel (*Dipsacus fullonum*), non-native invasive reed canarygrass (*Phalaris arundinacea*), colonial bentgrass (*Agrostis capillaris*), and Kentucky bluegrass (*Poa pratensis*). Patches of non-native invasive Himalayan blackberry (*Rubus armeniacus*) were also observed onsite.

4.4 Critical Area Inventories

The Whatcom County Stream and Wetland Inventory (Appendix B3) identifies wetlands on the majority of the eastern portion of the property. The USFWS NWI map (Appendix B5) and WDFW PHS map (Appendix B6) identify one potential wetland on the central portion of the property and an additional wetland offsite to the south. The City of Bellingham stream and wetland inventory (Appendix B4) does not identify any wetlands on or within 150 feet of the subject property; however, the City of Bellingham CityIQ map (Appendix B9) identifies two visually-assessed wetlands to the south and east of the property. Additionally, the DNR stream typing map (Appendix B7) and WDFW SalmonScape map (Appendix B8) do not identify any potential streams or salmonid presence within 150 feet of the subject property.

According to the USFWS IPaC mapping database, marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophila alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*), and bull trout (*Salvelinus confluentus*) have the potential to occur within 150 feet of the subject property. The WDFW PHS map also identifies big brown bat (*Eptesicus fuscus*) as occurring within the township, but not necessarily within the vicinity of the subject property. No other potentially-regulated wetlands, streams, or priority habitats or species are identified on or within 150 feet of the subject property.

4.5 Precipitation

Precipitation data was acquired from the National Oceanic and Atmospheric Administration (NOAA) station at Bellingham International Airport in order to obtain percent of normal precipitation for the north Puget Sound region during and preceding the investigation. A summary of data collected is provided in Table 1.

Table 1. Precipitation Summary¹

Date	Day Of	Day Before	1 Week Prior	2 Weeks Prior	30 Days Prior (Observed/Normal)	Year to Date (Observed/Normal) ²	Percent of Normal ³
03/03/2022	0.01	0.11	0.82	1.24	1.69/3.18	26.63/21.05	53/127

Notes:

1. Precipitation levels provided in inches. Data obtained from NOAA (<http://w2.weather.gov/climate/xmacis.php?wfo=sew>) for SeaTac International Airport.
2. Year-to-date precipitation is for the 2021/2022 water year from October 1 to the onsite date.
3. Percent of normal is shown for the last 30 days and the 2021/2022 water year to date.

Precipitation levels during the March 2022 site visit were below normal for the prior 30 days (53 percent of normal) and within statistical normal for the 2021/2022 water year (127 percent of normal). It should be noted that eight days of data are missing within the 2021/2022 water year and one day of data is missing for the prior 30 days, and as such, precipitation data may be slightly skewed. Overall, this precipitation data suggests that hydrologic conditions were likely slightly drier to normal during the March site visit. Such conditions were considered in making professional wetland boundary determinations.

4.6 Previous Critical Areas Studies

A Wetland Delineation Report was completed by Northwest Ecological Services, LLC (NES) in 2013 for the east-adjacent parcels (38030709845 and 380307135495). NES delineated seven wetlands and two streams/drainages greater than 150 feet east of the subject property (Appendix H). The closest delineated wetland (Wetland B by NES; Wetland 3 by SVC) approximately 200 feet east of the current subject site was rated as a Category II wetland based on the outdated 2004 Wetland Rating Manual (Hruby, 2004) and was subject to a standard 150-foot buffer. A seasonal, non-fish drainage was identified within Wetland B. Refer to Chapter 5 for a current assessment of these previously identified critical areas and Appendix E for an updated depressional wetland rating form for Wetland B (Wetland 3 by SVC).

In addition, according to the City of Bellingham CityIQ database (Appendix B9), a reconnaissance investigation was completed by NES in 2006 for the south-adjacent parcel (380307033505). The reconnaissance investigation identified one wetland approximately 48 feet southwest of the subject property and an additional wetland directly adjacent to the northern property boundary. Refer to Chapter 5 for a current assessment of these previously identified wetlands (currently referred to as Wetlands 1 and A, respectively) and Appendix E for associated wetland rating forms.

Chapter 5. Results

The site investigation in March of 2022 identified one potentially-regulated wetland (Wetland A) on the subject property. Additionally, three wetlands (Wetlands 1 - 3) were identified offsite to the north, east, and south. No other potentially-regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified within 150 feet of the subject property during the site investigation.

5.1 Wetlands

The identified wetlands contained indicators of hydric soils (presumed for offsite wetlands), wetland hydrology, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. Wetland data forms are provided in Appendix D; wetland rating forms are provided in Appendix E; and wetland rating maps are provided in Appendix F. Table 2 summarizes the wetlands identified during the site investigation.

Table 2. Wetland Summary

Wetland	Predominant Wetland Classification / Rating				Wetland Size Onsite (square feet)	Buffer Width (feet) ⁵
	Cowardin ¹	HGM ²	WSDOE ³	City of Bellingham ⁴		
A	PEMC	Depressional	IV	IV	5,420	50
1	PEMBC	Depressional	IV	IV	N/A	50
2	PEMBC	Depressional	IV	IV	N/A	50
3	PFOBC	Depressional	III	III	N/A	150

Notes:

1. Cowardin et al. (1979); Federal Geographic Data Committee (2013); class based on vegetation: PFO = Palustrine Forested; PEM = Palustrine Emergent. Modifiers for Water Regime: B = Seasonally Saturated; C = Seasonally Flooded.
2. Brinson, M. M. (1993).
3. Current WSDOE wetland rating system for Western Washington (Hruby, 2014).
4. BMC 16.55.280 wetland definitions.
5. BMC 16.55.340(B) wetland buffer standards.

Wetland A

Wetland A is approximately 5,420 square feet (0.12 acre) in size onsite and is located on the west-central portion of the subject property, directly east of the existing non-conforming commercial development. Hydrology for Wetland A is provided by a seasonally high groundwater table, direct precipitation, and surface sheet flow. Wetland vegetation is dominated by reed canarygrass (*Phalaris arundinacea*) and soft rush (*Juncus effusus*). Wetland A is a Palustrine Emergent, Seasonally Flooded (PEMC) wetland. Per BMC 16.55.280, Wetland A is a Category IV depressional wetland with 4 habitat points. Table 3 summarizes Wetland A.

Wetland A was identified as continuing offsite to the south during a reconnaissance investigation conducted by NES in 2006. During SVC's March 2022 investigation, the offsite area appeared to be excavated, yet slightly elevated above onsite Wetland A. The area also contained typical field species common to the upland areas onsite rather than the facultative-wetland plant community identified within Wetland A. As such, this area was excluded from Wetland A.

Offsite Wetland 1

Offsite Wetland C is approximately 6,912 square feet (0.16 acre) in size and is located approximately 70 feet south of the subject property. Hydrology for Wetland 1 is likely provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Wetland vegetation is dominated by maintained grasses and could not be identified from the offsite location. However, the grasses appear to be similar to the onsite vegetation and likely consists of colonial bentgrass and Kentucky bluegrass. Wetland 1 is a Palustrine Emergent, Seasonally Flooded and Saturated wetland (PEMBC). Per BMC 16.55.280, Wetland 1 is a Category IV depressional wetland with 4 habitat points. Refer to Appendix G for a photograph of Wetland 1.

Wetland 1 was previously identified by NES during a reconnaissance investigation in 2006. The current assessment identified a similar location of Wetland 1.

Offsite Wetland 2

Wetland 2 is approximately 8,414 square feet (0.19 acre) in size and is located approximately 44 feet north of the subject property, north of Van Wyck Road. Hydrology for Wetland 2 is likely provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Wetland vegetation is dominated by reed canarygrass. Wetland 2 is a Palustrine Emergent, Seasonally Flooded and Saturated wetland (PEMBC). Per BMC 16.55.280, Wetland 2 is a Category IV depressional wetland with 4 habitat points. Refer to Appendix G for a photograph of Wetland 2.

Offsite Wetland 3

Wetland 3 is approximately 31,991 square feet (0.73 acre) in size and is located approximately 200 feet east of the subject property. Hydrology for Wetland 3 is likely provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Wetland 3 is situated in a large swale with no defined bed or bank. Wetland vegetation is dominated by red alder (*Alnus rubra*), salmonberry (*Rubus spectabilis*), common ladyfern (*Athyrium cyclosum*), and creeping buttercup (*Ranunculus repens*). Wetland 3 is Palustrine Forested, Seasonally Saturated, Seasonally Flooded wetland (PFOBC). Per BMC 16.55.280, Wetland 3 is a Category III depressional wetland with 5 habitat points. Due to the location of this wetland greater than 150 offsite, no wetland summary table is provided. Refer to Appendix G for a photograph of Wetland 3.

Wetland 3 was previously delineated as "Wetland B" and rated as a Category II riverine wetland by NES in October 2013 (NES, 2013). However, this wetland rating was based on the outdated 2004 Wetland Rating Manual (Hruby, 2004) and also appears to have been incorrectly classified as a riverine wetland. NES identified one stream (Spring Creek, Type F) along the eastern portion of the site that is disconnected from Wetland B (Wetland 3 by SVC) and one seasonal drainage previously classified as a non-fish stream within Wetland B. However, based on the photographic documentation provided by NES in Appendix C of the report, no channel exhibiting a defined bed or bank meeting the Washington Administrative Code (WAC) 222-16-030 definition of a stream per BMC 16.55.470.A.4 was identified in Wetland B. To qualify for the riverine hydrogeomorphic wetland classification, the wetland unit must meet the following criteria: (1) the unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river, and (2) the overbank flooding occurs at least once every two years (Hruby, 2014). Rather, the wetland is located in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. Therefore, given the lack of a stream within Wetland B and location within a depression in the landscape, the correct hydrogeomorphic classification would be depressional.

Table 3. Wetland A Summary

WETLAND A – INFORMATION SUMMARY	
Location:	Located on the west-central portion of the subject property.
	Local Jurisdiction City of Bellingham WRRA 1 – Nooksack WSDOE Rating (Hruby, 2014) IV City of Bellingham Rating IV City of Bellingham Buffer Width 50 feet Wetland Size 5,420 SF (0.12acre) Cowardin Classification PEMBC HGM Classification Depressional Wetland Data Sheet DP-3 Upland Data Sheet DP-4 Boundary Flag color Orange
Dominant Vegetation	Wetland vegetation is dominated by reed canarygrass and soft rush.
Soils	Hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix) were observed.
Hydrology	Hydrology for Wetland A is provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table.
Rationale for Delineation	Wetland boundaries were determined by topographic drop and a transition to hydric soils and wetland hydrology.
Rationale for Local Rating	Local rating is based upon Hruby (2014) rating system per BMC 16.55.280.
Wetland Functions Summary	
Water Quality	Wetland A has a moderate potential to improve water quality due to the presence of an intermittent outlet, seasonal ponding in greater than half the wetland, its proximity to land uses that generate pollutants, and its location within a watershed with impaired waters. Wetland A's score for water quality functions using the 2014 rating method is moderate (7).
Hydrologic	Wetland A has low potential to provide hydrologic function due to intermittent outlet, low depth of ponding, its size relative to the contributing basin, and less than 25 percent intensive land use within the contributing basin. The landscape supports hydrologic functions due to its proximity to land uses that generate excess runoff. Wetland A provides low value to society due to the limited flooding in the vicinity of the wetland. Wetland A's score for hydrologic functions using the 2014 rating method is low (4).
Habitat	Wetland A has a low potential to provide habitat due to the limited Cowardin classes and hydroperiods, moderate richness of plant species, low interspersion of habitat, and lack of special habitat features or PHS priority habitats. Additionally, the landscape potential is low due to the surrounding developments. Wetland A's score for habitat functions using the 2014 rating method is low (4).
Buffer Condition	The onsite buffer surrounding Wetland A is highly disturbed and dominated by non-native invasive species, the existing commercial development, and trash and debris.

5.2 Artificially Excavated Ditch

One artificially excavated roadside ditch was identified adjacent to the subject property on Van Wyck Road. The ditch is approximately 2 – 3 feet wide on average and appears to be artificially created for roadside stormwater drainage purposes. The ditch was lined with mowed grasses and lacked a natural defined bed or bank.

The identified ditch is not mapped by DNR, Whatcom County, or the City of Bellingham, and the WDFW Salmonscape map does not identify any potential salmonid presence on or near the subject property. As the ditch lacks a defined bed or bank, it does not meet the WAC 222-16-030 definition of a stream. As such, the ditch is not likely considered a regulated stream under BMC 16.55.270.B.2, and no buffer is warranted.

5.3 Fish and Wildlife Habitat Conservation Area Assessment

5.3.1 Lack of Priority Habitats and Species

According to the USFWS IPaC mapping database, marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophila alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*), and bull trout (*Salvelinus confluentus*) have the potential to occur within 150 feet of the subject property. Marbled murrelet in the state of Washington are year-round residents on coastal waters and primarily feed in waters within 500 feet of the shore out to 1.2 miles from shore at depths of less than one hundred feet. Potential suitable habitat typically consists of tree stands 5 or more acres in size composed of 60 percent or more conifer cover with minimum 15-inch diameter at breast height (DBH). Streaked horned lark (*Eremophila alpestris strigata*) are found primarily in prairie habitat or unvegetated to sparsely vegetated open habitats (Pearson & Anderson, 2015), in dune habitats along the coast of Washington; in prairies of western Washington and western Oregon; and on the sandy beaches and islands along the Columbia and Willamette Rivers (USFWS, 2019). Studies conducted by the USFWS indicate that sites used by larks are generally found in open (i.e., flat, treeless) landscapes 300 acres or more in size such as airports (USFWS, 2013). Yellow-billed cuckoo habitat consists of low to mid-level riparian forests dominated by cottonwoods and willows. Suitable habitat is approximately 100 to 198 acres and wider than 200 meters; marginal habitat is approximately 20 to 100 acres and 100 to 200 meters wide; and unsuitable habitat is smaller than approximately 37 acres and less than 100 meters wide (Wiles & Kalasz, 2017). Bull trout require colder water temperatures, clean stream substrates, complex streams, and connectivity to river, lakes, and ocean habitats. No suitable breeding or foraging habitat for marbled murrelet, streaked horned lark, yellow-billed cuckoo, or bull trout occur within 150 feet of the subject property.

WDFW PHS map also identifies big brown bat (*Eptesicus fuscus*) as occurring within the township; however, not necessarily within the vicinity of the subject property. Big brown bat is known to roost communally in trees, buildings, bridges, and other structures. Preferred roosting habitat typically consists of trees with a diameter at breast height (DBH) of 50 centimeters or more, height of 18 meters or taller, and evidence of decay (Hayes and Wiles, 2013). Preferred tree species include Douglas fir (*Pseudotsuga menziesii*), quaking aspen (*Populus tremuloides*), and ponderosa pine (*Pinus ponderosa*). The big brown bat is an insectivore. Big brown bats rely primarily on larger, heavier-bodied prey such as beetles and have less maneuverability and are more typically found foraging above the forest canopy and in clearings.

The regional landscape surrounding the subject property review area consists primarily of commercial and residential development surrounded by high-capacity arterial roads, unmaintained fields, and minimal large forest patches, limited to areas offsite to the east. Potential habitat for Big brown bat is limited by existing tree conditions, presence of non-native invasive species, and residential and agricultural land uses.

5.3.2 Lack of Previously Identified Stream

A Wetland Delineation Report was completed by Northwest Ecological Services, LLC (NES) in 2013 for the east-adjacent parcels (38030709845 and 380307135495). NES delineated seven wetlands and two streams/drainages greater than 150 feet east of the subject property (Appendix H). The closest stream was identified approximately 200 feet east of the current subject site; this feature was considered a seasonal, non-fish drainage within Wetland B (Wetland 3 by SVC). SVC investigated the offsite area from Van Wyck Road and found no evidence of a channel exhibiting a defined bed and bank that would meet the definition of a stream under WAC 222-16-030 per BMC 16.55.470.A.4, as depicted in the photograph of Wetland B provided in Appendix G. This is consistent with the photographic documentation provided by NES (2013) in Appendix C which depicts a lack of any channel, bed, or bank that would suggest the presence of a watercourse. As such, SVC contends that no stream is or ever was present offsite to the east within Wetland B (Wetland 3 by SVC).

Chapter 6. Regulatory Considerations

The site investigation in March of 2022 identified one potentially-regulated wetland (Wetland A) on the subject property. Additionally, three wetlands (Wetlands 1 - 3) were identified offsite to the north, east and south of the subject property. No other potentially-regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified within 150 feet of the subject property during the site investigation.

6.1 Local Considerations

6.1.1 Buffer Standards

BMC 16.55.280 has adopted the current wetland rating system for western Washington (Hruby, 2014). Category IV wetlands have the lowest levels of functions (scores fewer than 16 points) and are often heavily disturbed.. Category III wetlands generally provide moderate levels of functions, have generally been disturbed in some ways, and are often less diverse or more isolated in the landscape than Category II wetlands. The City of Bellingham determines wetland buffer widths based on the wetland rating category, habitat functional score, and land use intensity. Per BMC 16.55.340(B), Wetlands A, 1 and 2 are classified as a Category IV wetlands subject to standard 50-foot buffers based on the proposed high intensity land use. Wetland 2 is classified as a Category III wetland with a moderate habitat score of 5 points subject to a standard 150-foot buffer based on the proposed high intensity land use. However, buffers from Wetlands 1 - 3 are not anticipated to project onto the site due to the distance from the property boundary and the presence of established roadways which interrupt the buffer functions per BMC 16.55.340.B. An additional 15-foot building setback is required from the edge of all wetland buffers per BMC 16.55.340(G).

6.1.2 Existing Non-Conforming Use

The Applicant proposes the redevelopment of the existing commercial building onsite. The subject property is partially developed with an existing and ongoing commercial restaurant, impervious surfaces, and associated infrastructure that were originally constructed prior to the implementation of the critical areas regulations under the Growth Management Act. Review of the Whatcom County tax assessor page confirms that the onsite structures were constructed in 1956. However, the site now contains a wetland and associated buffer adjacent to the existing infrastructure. As such, the developed portions of the subject property are existing and ongoing nonconforming uses per BMC 16.55.130. The wetland buffer is functionally interrupted by the existing non-conforming development and impervious surfaces; therefore, the buffer for Wetland A terminates at the existing edge of pavement/substantial development onsite. The replacement of the existing commercial building is allowed per BMC 16.55.130.C.2, as long as the new structure will not further impact critical areas or buffers per BMC 16.55.130.B. Due to fire damage, the existing structure is littered with trash and debris and lacks functional associated infrastructure (i.e. stormwater and wastewater infrastructure). As such, the proposed redevelopment would be ecologically beneficial as it would provide adequate water quality treatment onsite and removal trash and debris associated with the fire damage.

6.2 State and Federal Considerations

In a December 2, 2008 memorandum from the Environmental Protection Agency (EPA) and USACE, joint guidance is provided that describes waters that are to be regulated under section 404 of

the CWA (USACE, 2008). This memorandum was amended on February 2, 2012 where the EPA and USACE issued a final guidance letter on waters protected by the CWA.

The 2012 guidance describes the following waters where jurisdiction would be asserted: 1) traditional navigable waters, 2) interstate waters, 3) wetlands adjacent to traditional navigable waters, 4) non-navigable tributaries of traditional navigable waters that are relatively permanent meaning they contain water at least seasonally (e.g. typically three months and does not include ephemeral waters), and 5) wetlands that directly abut permanent waters. The regulated waters are those associated with naturally occurring waters and water courses and not artificial waters (i.e. stormwater pond outfalls).

The 2012 memorandum further goes on to describe waters where jurisdiction would likely require further analysis: 1) Tributaries to traditional navigable waters or interstate waters, 2) Wetlands adjacent to jurisdictional tributaries to traditional navigable waters or interstate waters, and 3) Waters that fall under the "other waters" category of the regulations.

In addition, the 2012 guidance identifies thirteen waters or areas where jurisdiction will not be asserted: 1) Wet areas that are not tributaries or open waters and do not meet the agencies regulatory definition of "wetlands", 2) Waters excluded from coverage under the CWA by existing regulations, 3) Waters that lack a "significant nexus" where one is required for a water to be jurisdictional, 4) Artificially irrigated areas that would revert to upland if the irrigation ceased, 5) Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing, 6) Artificial reflecting pools or swimming pools excavated in uplands, 7) Small ornamental waters created by excavating and/or diking dry land to retain water for primarily aesthetic reasons, and puddles, 8) Water-filled depressions created incidental to construction activity, 9) Groundwater, including groundwater drained through subsurface drainage systems, 10) Erosional features (gullies and rills), 11) Non-wetland swales, 12) Ditches that are excavated wholly in uplands, drain only uplands or non-jurisdictional waters, and have no more than ephemeral flow, and 13) Ditches that do not contribute flow, either directly or through other waterbodies, to a traditional navigable water, interstate water, or territorial sea.

Wetland A drains into a pipe onsite that likely connects to the City of Bellingham stormwater system and does not provide connection to a navigable water. Additionally, Wetlands 1 – 2 appear to flow into artificially and intentionally created ditches that lack a surface water connection to potentially jurisdictional waters. As such, Wetlands A and 1 -2 are not likely regulated as WOTUS. Wetland 3 appears to flow southwest approximately 430 feet south of the subject property. As no determination on the hydrologic connectivity could be made, Wetland 3 is presumed to be jurisdictional. However, Wetlands A, 1 - 3 are considered natural waters that are likely regulated by the WSDOE through the Revised Code of Washington (RCW) 90.48.

Chapter 7. Closure

The findings and conclusions documented in this report have been prepared for specific application to the Pho Rebuild site. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this project may need to be revised wholly or in part.

The critical area determinations by Soundview Consultants LLC are based on conditions present at the time of the site inspection and considered preliminary until the presence or absence and location of critical areas are validated by the jurisdictional agencies. Validation of the critical area determinations by the regulating agencies provides a certification, usually written, that the critical area boundaries or lack thereof verified are the boundaries that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulating agencies can provide this certification.

Since critical areas are dynamic communities affected by both natural and human activities, changes in critical area determinations and/or boundaries may be expected; therefore, critical area determinations cannot remain valid for an indefinite period of time. Local agencies typically recognize the validity of critical area determinations for a period of 5 years after completion of a wetland delineation and fish and wildlife habitat assessment report. Development activities on a site 5 years after the completion of this report may require revision of the critical area determinations and/or delineations. In addition, changes in government codes, regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

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Appendix A -- Methods and Tools

Table A1. Methods and tools used to prepare the report.

Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf	Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Western Mountains, Valleys, and Coast Region Regional Supplement	http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_finalsupp.pdf	U.S. Army Corps of Engineers. 2010. <i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)</i> , ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf https://www.fgdc.gov/standards/projects/wetlands/nwcs-2013	Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Government Printing Office, Washington, D.C. Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
	Hydrogeomorphic Classification (HGM) System	http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf	Brinson, M. M. (1993). "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
Wetland Rating	Washington State Wetland Rating System	http://www.ecy.wa.gov/biblio/0406025.html	Hruby, T. 2014. Washington State wetland rating system for western Washington –Revised. Publication # 04-06-025.
Wetland Indicator Status	2018 National Wetland Plant List	http://wetland-plants.usace.army.mil/	USACE. 2018. National Wetland Plant List, version 3.5.
Stream Classification	Department of Natural Resources Water Typing System	Forest Practices Water Typing: http://www.stage.dnr.wa.gov/forestpractices/watertyping/	Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.
Plant Names and Identification	USDA Plant Database	http://plants.usda.gov/	Website.
	Flora of the Pacific Northwest	http://www.pnwherbaria.org/florapnw.php	Hitchcock, C.L. & A. Cronquist, Ed. by D. Giblin, B. Ledger, P. Zika, and R. Olmstead. 2018. Flora of the Pacific Northwest, 2nd Edition. U.W. Press and Burke Museum. Seattle, Washington.
Soils Data	NRCS Soil Survey	http://websoilsurvey.nrcs.usda.gov/app/	Website GIS data based upon:

Parameter	Method or Tool	Website	Reference
			Goldin, Alan. 1992. Soil Survey of Whatcom County Area, Washington. Soil Conservation Service United States Department of Agriculture, Soil Conservation Service, in cooperation with the Washington Agricultural Experiment Station. Natural Resource Conservation Service..
	Soil Color Charts		Munsell® Color. 2000. Munsell® Soil Color Charts. New Windsor, New York.
	Soil Data Access Hydric Soils List	https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html	Natural Resources Conservation Service. N.d. Soil Data Access Hydric Soils List (Soil Data Access Live).
	Field Indicators of Hydric Soils	https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf	NRCS. 2018. <i>Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.)</i> . USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
Threatened and Endangered Species	Washington Natural Heritage Program	http://data-wadnr.opendata.arcgis.com/datasets/wnhp-current-element-occurrences	Washington Natural Heritage Program. Endangered, threatened, and sensitive plants of Washington. Washington State Department of Natural Resources, Washington Natural Heritage Program, Olympia, WA
	Washington Priority Habitats and Species	http://wdfw.wa.gov/hab/phspage.htm	Priority Habitats and Species (PHS) Program Map of priority habitats and species in project vicinity. Washington Department of Fish and Wildlife.
Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/mapping/salmonscape/	Website
Report Preparation	Bellingham Municipal Code	https://bellingham.municipal.codes/BMC/16.55	BMC Chapter 16.55 – Critical Areas

Appendix B -- Background Information

This appendix includes a Whatcom County Contours Map (B1); NRCS Soil Survey Map (B2); Whatcom County Stream and Wetland Inventory (B3); City of Bellingham Stream Inventory (B4); USFWS NWI Map (B5); WDFW PHS Map (B6); DNR Stream Typing Map (B7); WDFW SalmonScape Map (B8); and City of Bellingham CityIQ Map (B9).

Appendix B1 -- Topographic Map



Appendix B2 -- NRCS Soil Survey Map



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 Statewide Parcels _Query result

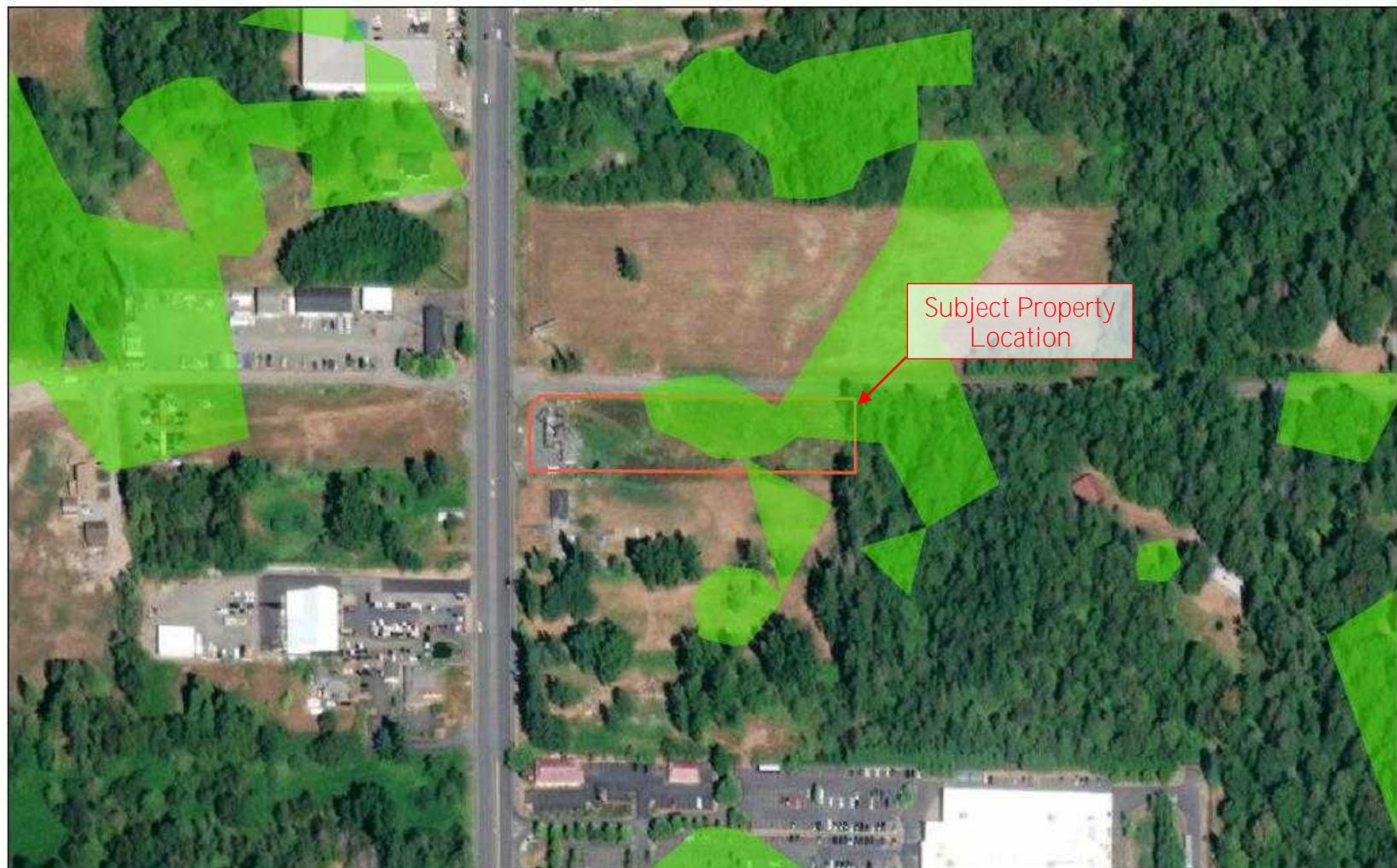
182- Whatcom-Labounty silt loams, 0 to 8 percent slopes

0 40 80 120 160
0 140 280 560 ft

 USA Soils Map Units

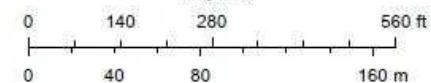
Source: USDA NRCS, Esri, Maxar

Appendix B3 -- Whatcom County Stream and Wetland Inventory



2/24/2022, 10:39:45 AM

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- Whatcom Wetlands - Whatcom_Wetlands
- Statewide Parcels _Query result

Maxar

Appendix B4 -- City of Bellingham Stream Inventory



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0 40 80 120 160 m
140 280 560 ft

Bellingham Stream Types - WA DNR - Fish Habitat Water Type Codes

Maxar

Soundview Consultants

F

Statewide Parcels _Query result

Appendix B5 -- USFWS NWI Map



February 24, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

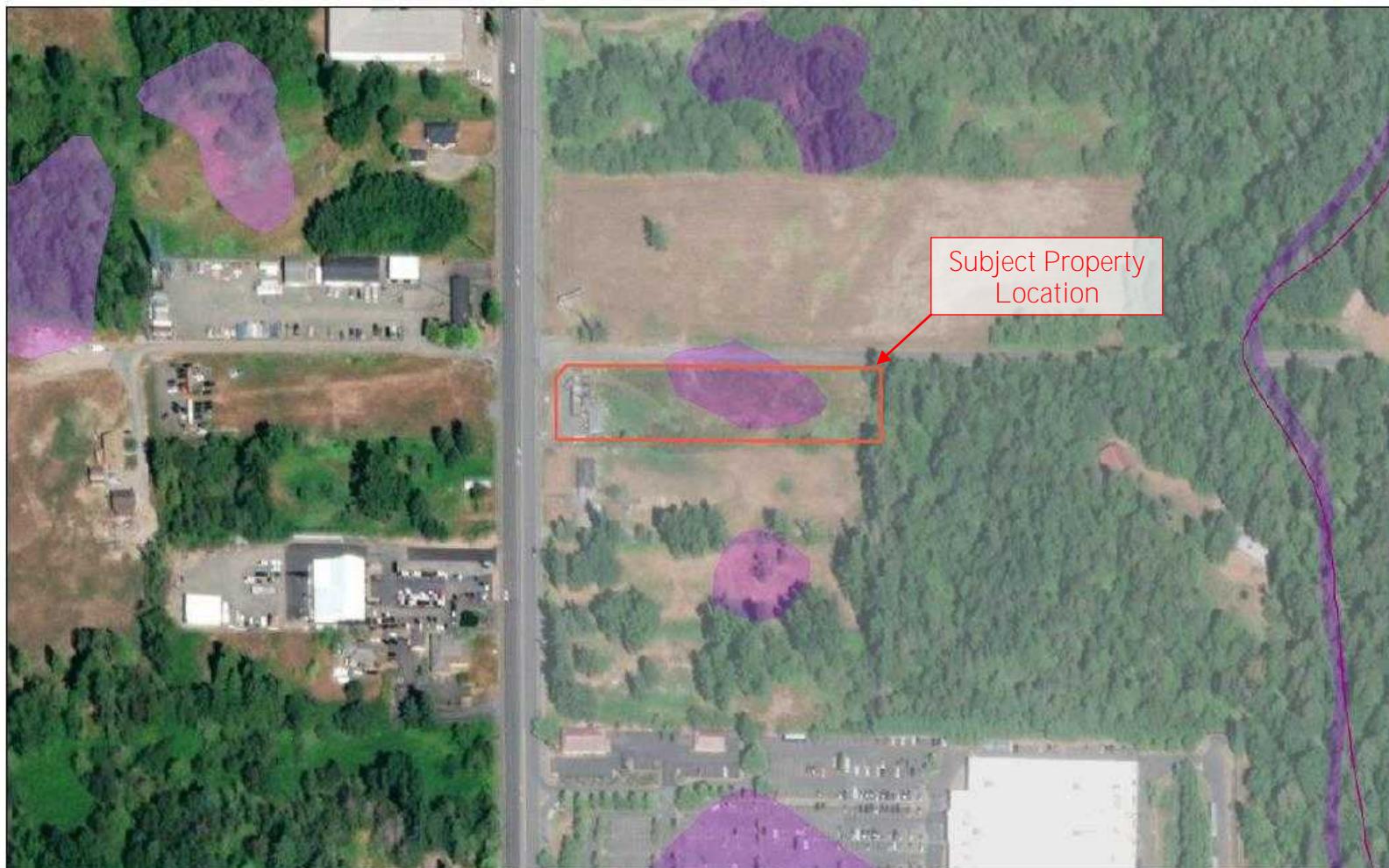
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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

National Wetlands Inventory (NWI)

Appendix B6 -- WDFW PHS Map



2/24/2022, 11:29:19 AM

PHS Public Lines

Masked

TOWNSHIP

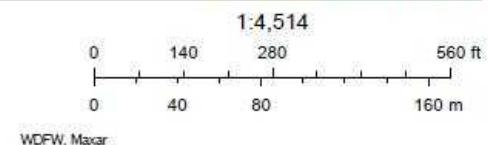
PHS Public Polygon Outlines

PHS Public Polygons

Statewide Parcels _Query result

AS MAPPED

AS MAPPED



Soundview Consultants

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Freshwater Emergent Wetland	N/A	N/A	No
Big brown bat	N/A	N/A	Yes

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1Cd
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Management Recommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

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

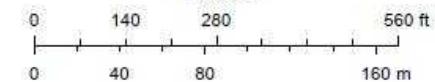
Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1Cd
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Management Recommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Appendix B7 -- DNR Stream Typing Map



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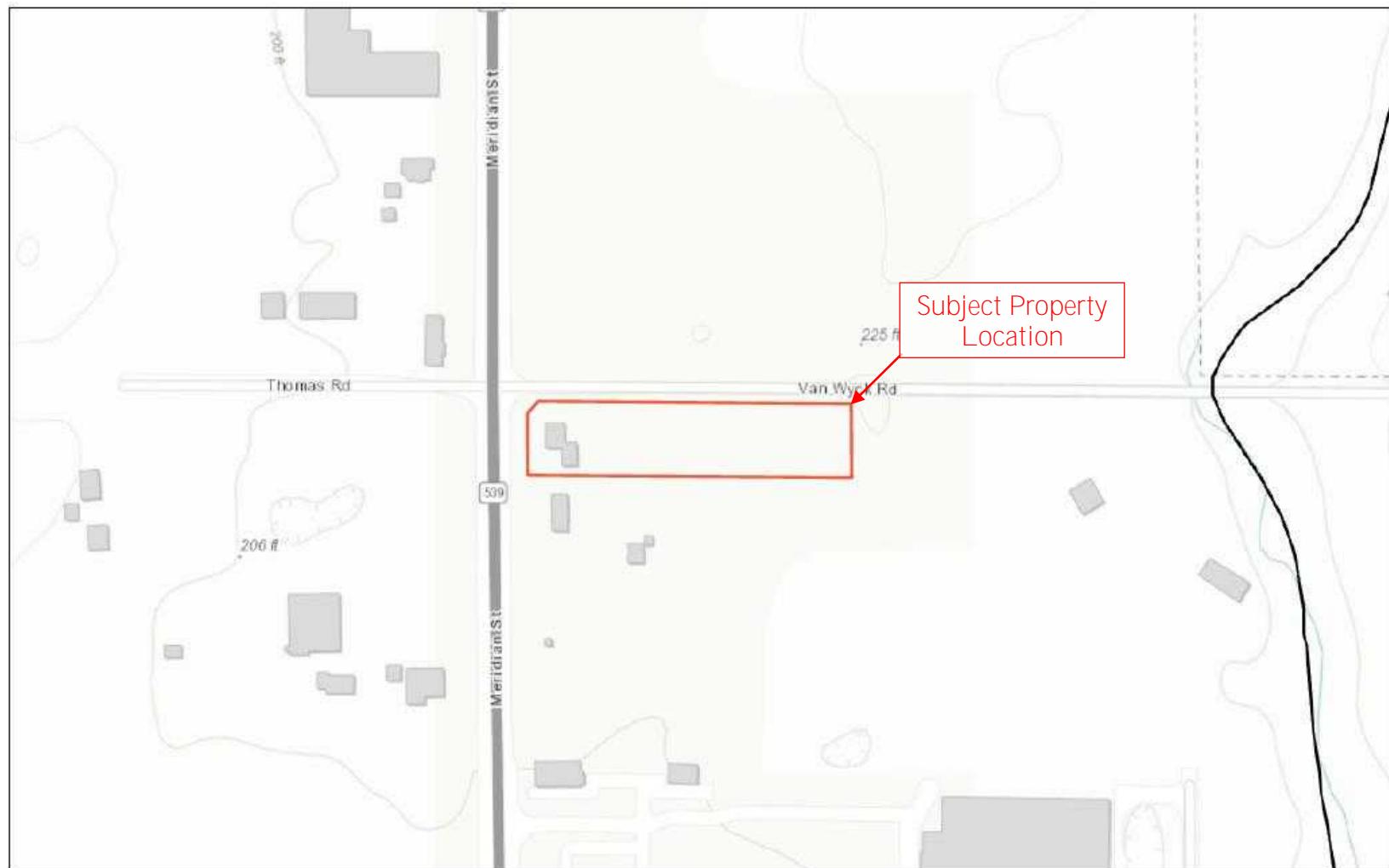


 Statewide Parcels _Query result DNR - Stream Typing - Watercourses (DNR)

— Type F

Maxar

Appendix B8 – WDFW SalmonScape Map



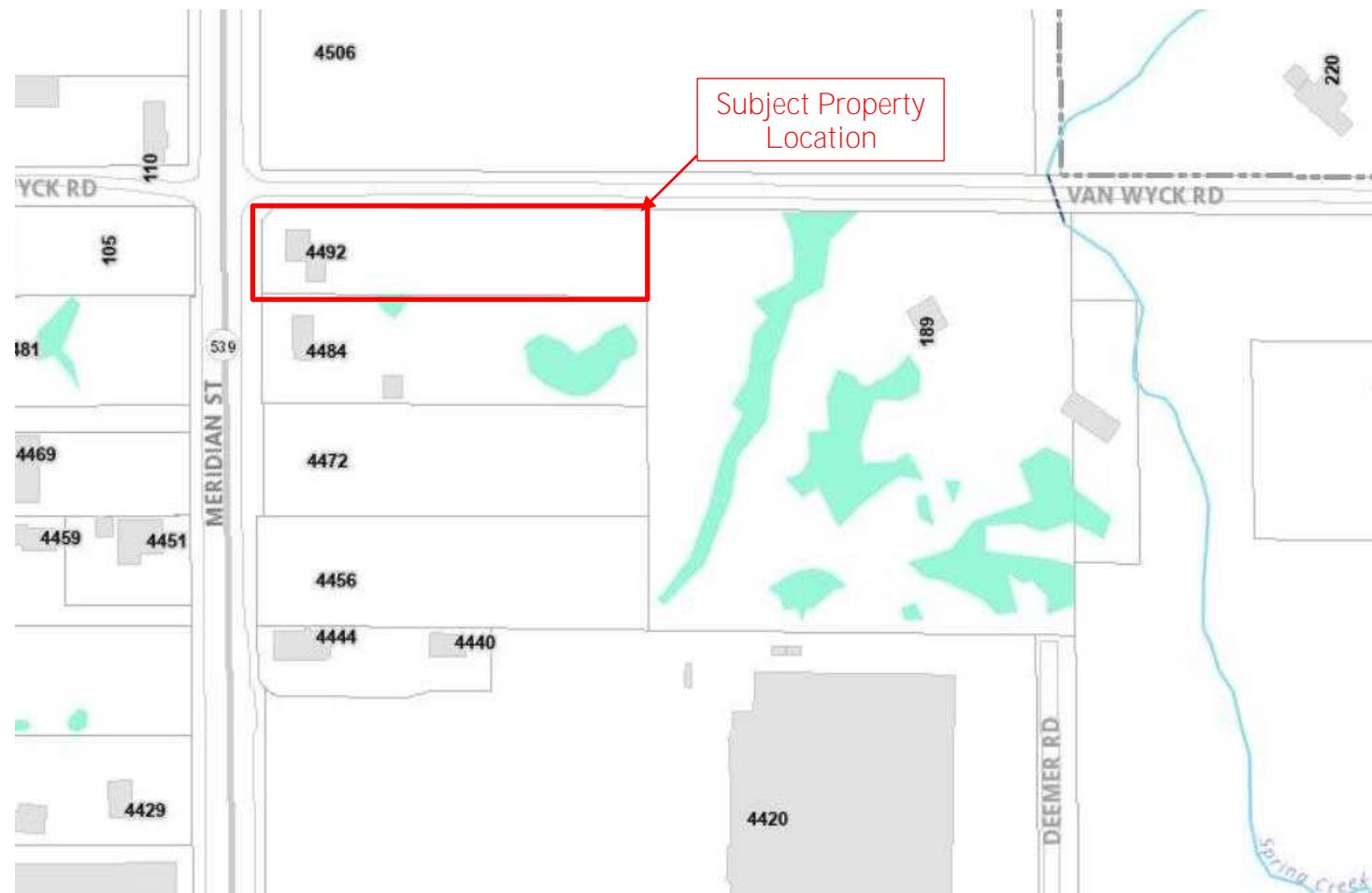
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Statewide Parcels _Query result

All SalmonScape Species

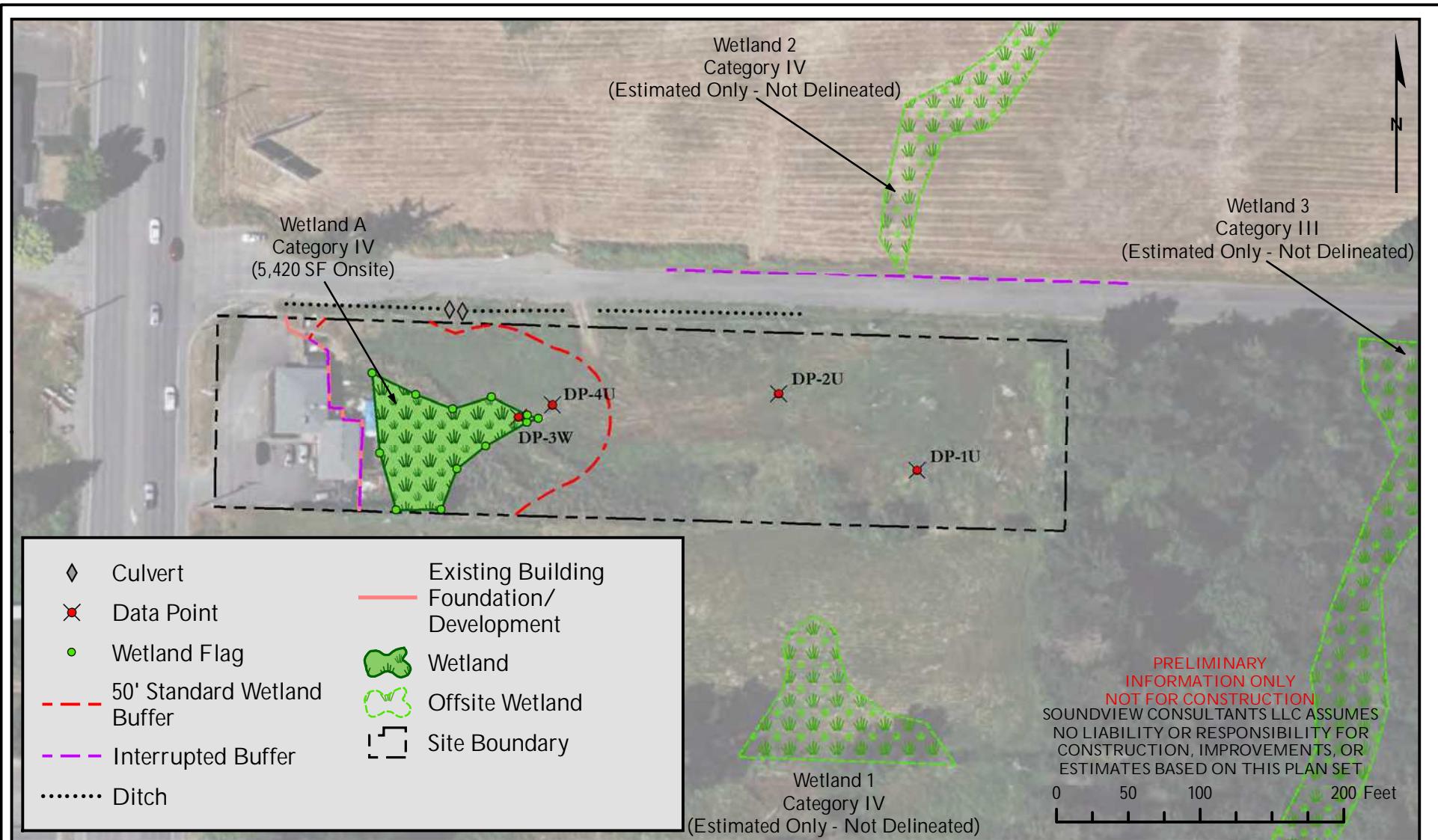
WDFW, City of Bellingham, Bureau of Land Management, Province of British

Appendix B9 – City of Bellingham CityIQ Map



Appendix C -- Existing Conditions Exhibit

EXISTING CONDITIONS



Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

PHO REBUILD
4492 MERIDIAN ST
BELLINGHAM, WA

WHATCOM COUNTY PARCEL NUMBER:
3803070325200000

DATE: 4/29/2022
JOB: 2221.0003
BY: DDS
SCALE: 1" = 100'
FIGURE NO. 1

Appendix D -- Data Forms

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

Project/Site: 2221.0003 - Pho Rebuild City/County: Bellingham/Whatcom Sampling Date: 3/3/2022
 Applicant/Owner: Credo Construction State: WA Sampling Point: DP-1
 Investigator(s): Lauren Templeton, Kramer Canup Section, Township, Range: Section 7, T38N, R3E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): A2 Lat: 48.803913 Long: -122.48379144 Datum: WGS 84
 Soil Map Unit Name: Whatcom-Labounty silt loams, 0 to 8 percent slopes (182) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: No wetland criteria were met. Located in low point on southeastern portion of property.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>10 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. <u>Phalaris arundinacea</u>	<u>70</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Tanacetum vulgare</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Cirsium arvense</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>93</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>7</u>				
Remarks: No hydrophytic vegetation criteria met. Prevalence test is not warranted due to a lack of hydric soil and wetland hydrology.				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

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

Project/Site: 2221.0003 - Pho Rebuild City/County: Bellingham/Whatcom Sampling Date: 3/3/2022
 Applicant/Owner: Credo Construction State: WA Sampling Point: DP-2
 Investigator(s): Lauren Templeton, Kramer Canup Section, Township, Range: Section 7, T38N, R3E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): A2 Lat: 48.804054 Long: -122.48419549 Datum: WGS 84
 Soil Map Unit Name: Whatcom-Labounty silt loams, 0 to 8 percent slopes (182) NWI classification: PEM1Cd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Not all three wetland criteria were met, only hydrophytic vegetation was observed. Located in potential wetland area mapped by Whatcom County Wetland Inventory map.	

VEGETATION – Use scientific names of plants.

Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft)					Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
1.					Total Number of Dominant Species Across All Strata: <u>3</u> (B)
2.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
3.					Prevalence Index worksheet:
4.					Total % Cover of: _____ Multiply by: _____
		<u>0</u>	= Total Cover		OBL species _____ x 1 = _____
Sapling/Shrub Stratum (Plot size: 30 ft)					FACW species _____ x 2 = _____
1.					FAC species _____ x 3 = _____
2.					FACU species _____ x 4 = _____
3.					UPL species _____ x 5 = _____
4.					Column Totals: _____ (A) _____ (B)
5.					Prevalence Index = B/A = _____
Herb Stratum (Plot size: 10 ft)					Hydrophytic Vegetation Indicators:
1. <u>Tanacetum vulgare</u>		<u>35</u>	<input checked="" type="checkbox"/> Yes	<u>FACU</u>	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
2. <u>Agrostis capillaris</u>		<u>25</u>	<input checked="" type="checkbox"/> Yes	<u>FAC</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
3. <u>Phalaris arundinacea</u>		<u>20</u>	<input checked="" type="checkbox"/> Yes	<u>FACW</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
4. <u>Poa pratensis</u>		<u>10</u>	<input type="checkbox"/> No	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u>Schedonorus arundinaceus</u>		<u>5</u>	<input type="checkbox"/> No	<u>FAC</u>	<input type="checkbox"/> Wetland Non-Vascular Plants ¹
6. <u>Cirsium arvense</u>		<u>1</u>	<input type="checkbox"/> No	<u>FAC</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
7. <u>Achillea millefolium</u>		<u>1</u>	<input type="checkbox"/> No	<u>FACU</u>	1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8.					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
9.					
10.					
11.					
		<u>97</u>	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft)					
1.					
2.					
% Bare Ground in Herb Stratum <u>3</u>					0 = Total Cover
Remarks: Hydrophytic vegetation criteria met through the dominance test.					

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

Project/Site: 2221.0003 - Pho Rebuild City/County: Bellingham/Whatcom Sampling Date: 3/3/2022
 Applicant/Owner: Credo Construction State: WA Sampling Point: DP-3
 Investigator(s): Lauren Templeton, Kramer Canup Section, Township, Range: Section 7, T38N, R3E
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 3
 Subregion (LRR): A2 Lat: 48.804000 Long: -122.48494473 Datum: WGS 84
 Soil Map Unit Name: Whatcom-Labounty silt loams, 0 to 8 percent slopes (182) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: All three wetland criteria met. Data collected in Wetland A.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1. _____ 2. _____ 3. _____ 4. _____ <u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <u>Herb Stratum</u> (Plot size: <u>10 ft</u>) 1. <u>Phalaris arundinacea</u> <u>45</u> <u>Yes</u> <u>FACW</u> 2. <u>Poa pratensis</u> <u>35</u> <u>Yes</u> <u>FAC</u> 3. <u>Tanacetum vulgare</u> <u>10</u> <u>No</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>) 1. _____ 2. _____ % Bare Ground in Herb Stratum <u>10</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) 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: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Hydrophytic vegetation criteria met through the dominance test.	

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

Project/Site: 2221.0003 - Pho Rebuild City/County: Bellingham/Whatcom Sampling Date: 3/3/2022
 Applicant/Owner: Credo Construction State: WA Sampling Point: DP-4
 Investigator(s): Lauren Templeton, Kramer Canup Section, Township, Range: Section 7, T38N, R3E
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 3
 Subregion (LRR): A2 Lat: 48.804024 Long: -122.48484786 Datum: WGS 84
 Soil Map Unit Name: Whatcom-Labounty silt loams, 0 to 8 percent slopes (182) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Not all three wetland criteria were met; lack of hydric soil. Upland plot to Wetland A. Data collected approximately 15 feet to the east of Wetland A boundary.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>)				Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30 ft</u>)				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
	<u>0</u>	= Total Cover		UPL species _____ x 5 = _____
<u>Herb Stratum</u> (Plot size: <u>10 ft</u>)				Column Totals: _____ (A) _____ (B)
1. <u>Agrostis capillaris</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>Poa pratensis</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Tanacetum vulgare</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:
4. <u>Phalaris arundinacea</u>	<u>15</u>	<u>No</u>	<u>FACW</u>	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
5. _____	_____	_____	_____	<input checked="" type="checkbox"/> Dominance Test is >50%
6. _____	_____	_____	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
7. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8. _____	_____	_____	_____	<input type="checkbox"/> Wetland Non-Vascular Plants ¹
9. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	<u>100</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>0</u>	<u>0</u>	= Total Cover		
Remarks:	Hydrophytic vegetation criteria met through the dominance test.			

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0 - 5	10YR 3/1	100	-	-	-	-	SaCILo	Sandy clay loam
5 - 14	10YR 3/1	100	-	-	-	-	SaGrLo	Sandy gravelly loam with cobble

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- 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 Soils³:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks:

No hydric soil criteria was met. In addition, soils do not meet for problematic hydric soil criteria.

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 (B9) (except MLRA 1, 2, 4A, and 4B)
- 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, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:Surface Water Present? Yes No Depth (inches): NoneWater Table Present? Yes No Depth (inches): 14Saturation Present? Yes No Depth (inches): 12Wetland Hydrology Present? Yes No

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

Remarks:

Wetland hydrology criteria met through indicator A3.

Appendix E -- Wetland Rating Forms

Wetland name or number 1

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 1 Date of site visit: 03/03/22

Rated by Lauren Templeton Trained by Ecology? Yes No Date of training 3/2021

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	L	L	L	
Landscape Potential	M	M	M	
Value	H	M	L	TOTAL
Score Based on Ratings	6	5	4	15

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number 1

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?
 NO – go to 2 YES – the wetland class is **Tidal Fringe** – go to 1.1
1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
 NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
 NO – go to 3 YES – The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*
3. Does the entire wetland unit **meet all** of the following criteria?
 The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 At least 30% of the open water area is deeper than 6.6 ft (2 m).
 NO – go to 4 YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)
4. Does the entire wetland unit **meet all** of the following criteria?
 The wetland is on a slope (*slope can be very gradual*),
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 The water leaves the wetland **without being impounded**.
 NO – go to 5 YES – The wetland class is **Slope**
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).
5. Does the entire wetland unit **meet all** of the following criteria?
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 The overbank flooding occurs at least once every 2 years.

Wetland name or number 1

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

HGM classes within the wetland unit 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number 1

DEPRESSATIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	2
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil <u>2</u> in below the surface (or duff layer) is true clay or true organic (<i>use NRCS definitions</i>). Yes = 4 No = 0		0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	0
Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > ½ total area of wetland	points = 4	2
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	4

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 3 or 4 = H X 1 or 2 = M 0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

Rating of Value If score is: X 2-4 = H 1 = M 0 = L *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number 1

DEPRESSATIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	2
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</i>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	0
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i>		
The area of the basin is less than 10 times the area of the unit	points = 5	3
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 wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	5

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	No = 0
		0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	No = 0
		1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1	No = 0
		0
Total for D 5	Add the points in the boxes above	1

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. <i>Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</i>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	1
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes = 2	No = 0	0
Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: 2-4 = H X 1 = M 0 = L *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

<input type="checkbox"/> Aquatic bed	4 structures or more: points = 4	0
<input checked="" type="checkbox"/> Emergent	3 structures: points = 2	
<input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1	
<input type="checkbox"/> Forested (areas where trees have > 30% cover)	1 structure: points = 0	

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

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

<input type="checkbox"/> Permanently flooded or inundated	4 or more types present: points = 3	1
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present: points = 2	
<input type="checkbox"/> Occasionally flooded or inundated	2 types present: points = 1	
<input checked="" type="checkbox"/> Saturated only	1 type present: points = 0	
<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland		
<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		
Lake Fringe wetland	2 points	
Freshwater tidal wetland	2 points	

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

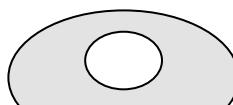
If you counted: > 19 species	points = 2	1
5 - 19 species	points = 1	
< 5 species	points = 0	

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



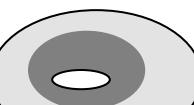
None = 0 points



Low = 1 point

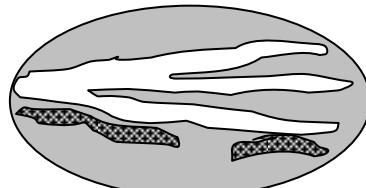
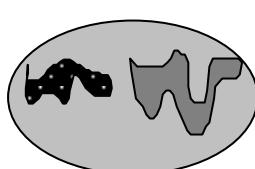


Moderate = 2 points



0

All three diagrams in this row are **HIGH** = 3 points



Wetland name or number 1

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

Standing snags (dbh > 4 in) within the wetland

Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*)

At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*)

Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

Total for H 1

Add the points in the boxes above

0

2

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses) /2] = 0 %

If total accessible habitat is:

> 1/3 (33.3%) of 1 km Polygon points = 3

20-33% of 1 km Polygon points = 2

10-19% of 1 km Polygon points = 1

< 10% of 1 km Polygon points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: % undisturbed habitat + [(% moderate and low intensity land uses) /2] = 42.985 %

Undisturbed habitat > 50% of Polygon points = 3

Undisturbed habitat 10-50% and in 1-3 patches points = 2

Undisturbed habitat 10-50% and > 3 patches points = 1

Undisturbed habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon: If

> 50% of 1 km Polygon is high intensity land use points = (- 2)

≤ 50% of 1 km Polygon is high intensity points = 0

0

Total for H 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 4-6 = H X 1-3 = M < 1 = L

Record the rating on the first page

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

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

Site meets ANY of the following criteria: points = 2

— It has 3 or more priority habitats within 100 m (see next page)

— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)

— It is mapped as a location for an individual WDFW priority species

— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources

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

Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

× Site does not meet any of the criteria above points = 0

0

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

Record the rating on the first page

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt	<input type="checkbox"/> Yes – Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	<input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes – Go to SC 2.2 <input checked="" type="checkbox"/> No – Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes – Contact WNHP/WDNR and go to SC 2.4 <input checked="" type="checkbox"/> No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

SC 4.0. Forested Wetlands

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

- **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.
- **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

Yes = **Category I** No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

- The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks
- The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions?

- The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).
- At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.
- The wetland is larger than $\frac{1}{10}$ ac (4350 ft²)

Yes = **Category I** No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBEO)? **If you answer yes you will still need to rate the wetland based on its habitat functions.**

In practical terms that means the following geographic areas:

- Long Beach Peninsula: Lands west of SR 103
- Grayland-Westport: Lands west of SR 105
- Ocean Shores-Copalis: Lands west of SR 115 and SR 109

Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**

SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form

Wetland name or number 1

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Wetland name or number 2

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 2 Date of site visit: 03/03/22

Rated by Lauren Templeton Trained by Ecology? Yes No Date of training 3/2021

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	L	L	L	
Landscape Potential	M	M	M	
Value	H	M	L	TOTAL
Score Based on Ratings	6	5	4	15

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number 2

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?
 NO – go to 2 YES – the wetland class is **Tidal Fringe** – go to 1.1
1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
 NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
 NO – go to 3 YES – The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*
3. Does the entire wetland unit **meet all** of the following criteria?
 The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 At least 30% of the open water area is deeper than 6.6 ft (2 m).
 NO – go to 4 YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)
4. Does the entire wetland unit **meet all** of the following criteria?
 The wetland is on a slope (*slope can be very gradual*),
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 The water leaves the wetland **without being impounded**.
 NO – go to 5 YES – The wetland class is **Slope**
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).
5. Does the entire wetland unit **meet all** of the following criteria?
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 The overbank flooding occurs at least once every 2 years.

Wetland name or number 2

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

HGM classes within the wetland unit 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number 2

DEPRESSATIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3

Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2

Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1

Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions*). Yes = 4 No = 0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

Wetland has persistent, ungrazed, plants > 95% of area points = 5

Wetland has persistent, ungrazed, plants > ½ of area points = 3

Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area points = 1

Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area points = 0

D 1.4. Characteristics of seasonal ponding or inundation:

This is the area that is ponded for at least 2 months. See description in manual.

Area seasonally ponded is > ½ total area of wetland points = 4

Area seasonally ponded is > ¼ total area of wetland points = 2

Area seasonally ponded is < ¼ total area of wetland points = 0

Total for D 1 Add the points in the boxes above 4

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 0

D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0 1

D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0 0

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?
Source _____ Yes = 1 No = 0 0

Total for D 2 Add the points in the boxes above 1

Rating of Landscape Potential If score is: 3 or 4 = H X 1 or 2 = M 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0 0

D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0 1

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0 2

Total for D 3 Add the points in the boxes above 3

Rating of Value If score is: X 2-4 = H 1 = M 0 = L Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number 2

DEPRESSATIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	2
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</i>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	0
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i>		
The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	2

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	No = 0
		0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	No = 0
		1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1	No = 0
		1
Total for D 5	Add the points in the boxes above	2

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. <i>Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</i>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	1
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes = 2	No = 0	0
Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: 2-4 = H X 1 = M 0 = L *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

<input type="checkbox"/> Aquatic bed	4 structures or more: points = 4
<input checked="" type="checkbox"/> Emergent	3 structures: points = 2
<input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
<input type="checkbox"/> Forested (areas where trees have > 30% cover)	1 structure: points = 0

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

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

<input type="checkbox"/> Permanently flooded or inundated	4 or more types present: points = 3
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present: points = 2
<input type="checkbox"/> Occasionally flooded or inundated	2 types present: points = 1
<input checked="" type="checkbox"/> Saturated only	1 type present: points = 0
<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland	
<input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland	
Lake Fringe wetland	2 points
Freshwater tidal wetland	2 points

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

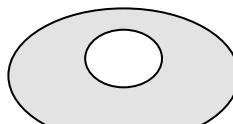
1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



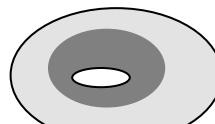
None = 0 points



Low = 1 point

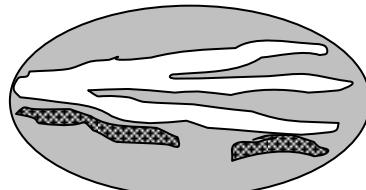
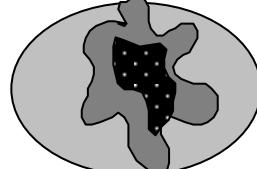
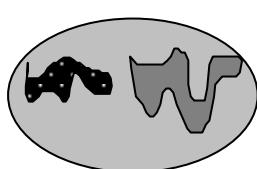


Moderate = 2 points



0

All three diagrams in this row are **HIGH** = 3 points



Wetland name or number 2

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

Standing snags (dbh > 4 in) within the wetland

Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*)

At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*)

Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

Total for H 1

Add the points in the boxes above

0

2

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 1.83 /2] = 0.915 %

If total accessible habitat is:

> 1/3 (33.3%) of 1 km Polygon points = 3

20-33% of 1 km Polygon points = 2

10-19% of 1 km Polygon points = 1

< 10% of 1 km Polygon points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: 25.62 % undisturbed habitat + [(% moderate and low intensity land uses) 34.73 /2] = 42.985 %

Undisturbed habitat > 50% of Polygon points = 3

Undisturbed habitat 10-50% and in 1-3 patches points = 2

Undisturbed habitat 10-50% and > 3 patches points = 1

Undisturbed habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon: If

> 50% of 1 km Polygon is high intensity land use points = (- 2)

≤ 50% of 1 km Polygon is high intensity points = 0

Total for H 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 4-6 = H X 1-3 = M < 1 = L

Record the rating on the first page

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

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

Site meets ANY of the following criteria: points = 2

It has 3 or more priority habitats within 100 m (see next page)

It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)

It is mapped as a location for an individual WDFW priority species

It is a Wetland of High Conservation Value as determined by the Department of Natural Resources

It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

Site does not meet any of the criteria above points = 0

0

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

Record the rating on the first page

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	Category
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt	<input type="checkbox"/> Yes – Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	<input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes – Go to SC 2.2 <input checked="" type="checkbox"/> No – Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	<input type="checkbox"/> Yes – Contact WNHP/WDNR and go to SC 2.4 <input checked="" type="checkbox"/> No = Not a WHCV
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

SC 4.0. Forested Wetlands

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

- **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.
- **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

Yes = **Category I** No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

- The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks
- The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions?

- The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).
- At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.
- The wetland is larger than $\frac{1}{10}$ ac (4350 ft²)

Yes = **Category I** No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBEO)? **If you answer yes you will still need to rate the wetland based on its habitat functions.**

In practical terms that means the following geographic areas:

- Long Beach Peninsula: Lands west of SR 103
- Grayland-Westport: Lands west of SR 105
- Ocean Shores-Copalis: Lands west of SR 115 and SR 109

Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**

SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form

Wetland name or number 2

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Wetland name or number 3

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 3 Date of site visit: 03/03/22

Rated by Lauren Templeton Trained by Ecology? Yes No Date of training 3/2021

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	M	M	L	
Landscape Potential	M	M	M	
Value	H	M	M	TOTAL
Score Based on Ratings	7	6	5	18

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number 3

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?
 NO – go to 2 YES – the wetland class is **Tidal Fringe** – go to 1.1
1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
 NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
 NO – go to 3 YES – The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*
3. Does the entire wetland unit **meet all** of the following criteria?
 The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 At least 30% of the open water area is deeper than 6.6 ft (2 m).
 NO – go to 4 YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)
4. Does the entire wetland unit **meet all** of the following criteria?
 The wetland is on a slope (*slope can be very gradual*),
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 The water leaves the wetland **without being impounded**.
 NO – go to 5 YES – The wetland class is **Slope**
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).
5. Does the entire wetland unit **meet all** of the following criteria?
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 The overbank flooding occurs at least once every 2 years.

Wetland name or number 3

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

HGM classes within the wetland unit 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number 3

DEPRESSATIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	2
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil <u>2</u> in below the surface (or duff layer) is true clay or true organic (<i>use NRCS definitions</i>). Yes = 4 No = 0		0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	3
Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	points = 4	2
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland	points = 2	
Area seasonally ponded is < $\frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	7

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3 or 4 = H X 1 or 2 = M 0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

Rating of Value If score is: X 2-4 = H 1 = M 0 = L *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number 3

DEPRESSATIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	2
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</i>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	0
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i>		
The area of the basin is less than 10 times the area of the unit	points = 5	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 wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	7

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	No = 0
		1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	No = 0
		1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1	No = 0
		0
Total for D 5	Add the points in the boxes above	2

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. <i>Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</i>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	1
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes = 2	No = 0	0
Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: 2-4 = H X 1 = M 0 = L *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- Aquatic bed
- Emergent
- Scrub-shrub (areas where shrubs have > 30% cover)
- Forested (areas where trees have > 30% cover)

If the unit has a Forested class, check if:

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

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated
- Seasonally flooded or inundated
- Occasionally flooded or inundated
- Saturated only
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland**
- Freshwater tidal wetland**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

2 points
2 points

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

If you counted: > 19 species

points = 2

5 - 19 species

points = 1

< 5 species

points = 0

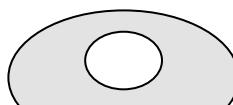
1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points



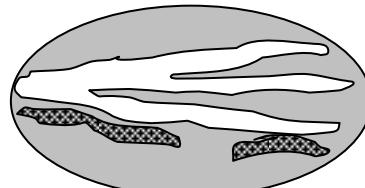
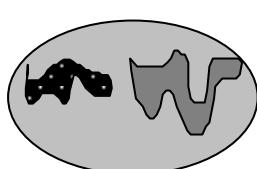
Low = 1 point



Moderate = 2 points

0

All three diagrams in this row are **HIGH** = 3 points



Wetland name or number 3

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

Standing snags (dbh > 4 in) within the wetland

Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*)

At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*)

Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

Total for H 1

Add the points in the boxes above

2

4

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 1.83 /2] = 0.915 %

If total accessible habitat is:

> 1/3 (33.3%) of 1 km Polygon points = 3

20-33% of 1 km Polygon points = 2

10-19% of 1 km Polygon points = 1

< 10% of 1 km Polygon points = 0

0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: 25.62 % undisturbed habitat + [(% moderate and low intensity land uses) 34.73 /2] = 42.985 %

Undisturbed habitat > 50% of Polygon points = 3

Undisturbed habitat 10-50% and in 1-3 patches points = 2

Undisturbed habitat 10-50% and > 3 patches points = 1

Undisturbed habitat < 10% of 1 km Polygon points = 0

1

H 2.3. Land use intensity in 1 km Polygon: If

> 50% of 1 km Polygon is high intensity land use points = (- 2)

≤ 50% of 1 km Polygon is high intensity points = 0

0

Total for H 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 4-6 = H X 1-3 = M < 1 = L

Record the rating on the first page

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

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

Site meets ANY of the following criteria: points = 2

It has 3 or more priority habitats within 100 m (see next page)

It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)

It is mapped as a location for an individual WDFW priority species

It is a Wetland of High Conservation Value as determined by the Department of Natural Resources

It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

Site does not meet any of the criteria above points = 0

1

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

Record the rating on the first page

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt	<input type="checkbox"/> Yes – Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	<input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes – Go to SC 2.2 <input checked="" type="checkbox"/> No – Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	<input type="checkbox"/> Yes – Contact WNHP/WDNR and go to SC 2.4 <input checked="" type="checkbox"/> No = Not a WHCV
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?	<input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

SC 4.0. Forested Wetlands

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

- **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.
- **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

Yes = **Category I** No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

- The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks
- The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions?

- The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).
- At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.
- The wetland is larger than $\frac{1}{10}$ ac (4350 ft²)

Yes = **Category I** No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBEO)? **If you answer yes you will still need to rate the wetland based on its habitat functions.**

In practical terms that means the following geographic areas:

- Long Beach Peninsula: Lands west of SR 103
- Grayland-Westport: Lands west of SR 105
- Ocean Shores-Copalis: Lands west of SR 115 and SR 109

Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**

SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form

Wetland name or number 3

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Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): A Date of site visit: 03/03/22

Rated by Lauren Templeton Trained by Ecology? Yes No Date of training 3/2021

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY IV (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	M	L	L	
Landscape Potential	M	M	M	
Value	H	L	L	TOTAL
Score Based on Ratings	7	4	4	15

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides except during floods?
 NO – go to 2 YES – the wetland class is **Tidal Fringe** – go to 1.1
1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
 NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
 NO – go to 3 YES – The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*
3. Does the entire wetland unit **meet all** of the following criteria?
 The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 At least 30% of the open water area is deeper than 6.6 ft (2 m).
 NO – go to 4 YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)
4. Does the entire wetland unit **meet all** of the following criteria?
 The wetland is on a slope (*slope can be very gradual*),
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 The water leaves the wetland **without being impounded**.
 NO – go to 5 YES – The wetland class is **Slope**
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).
5. Does the entire wetland unit **meet all** of the following criteria?
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 The overbank flooding occurs at least once every 2 years.

Wetland name or number A

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

HGM classes within the wetland unit 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 of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number A

DEPRESSATIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	2
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil <u>2</u> in below the surface (or duff layer) is true clay or true organic (<i>use NRCS definitions</i>). Yes = 4 No = 0		0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > ½ of area	points = 3	3
Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area	points = 1	
Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > ½ total area of wetland	points = 4	4
Area seasonally ponded is > ¼ total area of wetland	points = 2	
Area seasonally ponded is < ¼ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	9

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3 or 4 = H X 1 or 2 = M 0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (<i>answer YES if there is a TMDL for the basin in which the unit is found</i>)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

Rating of Value If score is: X 2-4 = H 1 = M 0 = L *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

DEPRESSATIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	2
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</i>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	0
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i>		
The area of the basin is less than 10 times the area of the unit	points = 5	3
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 wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	5

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1	No = 0
		0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1	No = 0
		1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1	No = 0
		0
Total for D 5	Add the points in the boxes above	1

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. <i>Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</i>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	0
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____	points = 0	
<i>The wetland drains through a pipe onsite that likely enters the City stormwater system.</i> _____	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes = 2	No = 0	0
Total for D 6	Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1 = M X 0 = L *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

<input type="checkbox"/> Aquatic bed	4 structures or more: points = 4	0
<input checked="" type="checkbox"/> Emergent	3 structures: points = 2	
<input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1	
<input type="checkbox"/> Forested (areas where trees have > 30% cover)	1 structure: points = 0	

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

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

<input type="checkbox"/> Permanently flooded or inundated	4 or more types present: points = 3	0
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present: points = 2	
<input type="checkbox"/> Occasionally flooded or inundated	2 types present: points = 1	
<input type="checkbox"/> 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

Freshwater tidal wetland

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

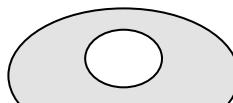
If you counted: > 19 species	points = 2	1
5 - 19 species	points = 1	
< 5 species	points = 0	

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



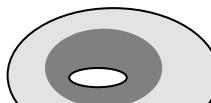
None = 0 points



Low = 1 point

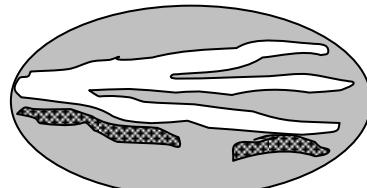
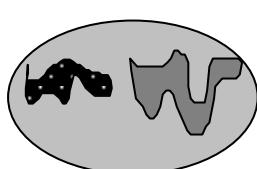


Moderate = 2 points



0

All three diagrams in this row are **HIGH** = 3 points



Wetland name or number A

H 1.5. Special habitat features:

Check the habitat features that are present in the wetland. *The number of checks is the number of points.*

Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).

Standing snags (dbh > 4 in) within the wetland

Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)

Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (*cut shrubs or trees that have not yet weathered where wood is exposed*)

At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (*structures for egg-laying by amphibians*)

Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

Total for H 1

Add the points in the boxes above

0

1

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*).

Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses) 1.83 /2] = 0.915 %

If total accessible habitat is:

> 1/3 (33.3%) of 1 km Polygon points = 3

20-33% of 1 km Polygon points = 2

10-19% of 1 km Polygon points = 1

< 10% of 1 km Polygon points = 0

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Calculate: 25.62 % undisturbed habitat + [(% moderate and low intensity land uses) 34.7 /2] = 42.97 %

Undisturbed habitat > 50% of Polygon points = 3

Undisturbed habitat 10-50% and in 1-3 patches points = 2

Undisturbed habitat 10-50% and > 3 patches points = 1

Undisturbed habitat < 10% of 1 km Polygon points = 0

H 2.3. Land use intensity in 1 km Polygon: If

> 50% of 1 km Polygon is high intensity land use points = (- 2)

≤ 50% of 1 km Polygon is high intensity points = 0

Total for H 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 4-6 = H X 1-3 = M < 1 = L

Record the rating on the first page

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

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

Site meets ANY of the following criteria: points = 2

It has 3 or more priority habitats within 100 m (see next page)

It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)

It is mapped as a location for an individual WDFW priority species

It is a Wetland of High Conservation Value as determined by the Department of Natural Resources

It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan

Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1

Site does not meet any of the criteria above points = 0

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

Record the rating on the first page

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt	<input type="checkbox"/> Yes – Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	<input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes – Go to SC 2.2 <input checked="" type="checkbox"/> No – Go to SC 2.3	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	<input type="checkbox"/> Yes – Contact WNHP/WDNR and go to SC 2.4 <input checked="" type="checkbox"/> No = Not a WHCV
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <input type="checkbox"/> Yes – Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.	
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

SC 4.0. Forested Wetlands

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

- **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.
- **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).

Yes = **Category I** No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

- The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks
- The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*)

Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions?

- The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).
- At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.
- The wetland is larger than $\frac{1}{10}$ ac (4350 ft²)

Yes = **Category I** No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBEO)? **If you answer yes you will still need to rate the wetland based on its habitat functions.**

In practical terms that means the following geographic areas:

- Long Beach Peninsula: Lands west of SR 103
- Grayland-Westport: Lands west of SR 105
- Ocean Shores-Copalis: Lands west of SR 115 and SR 109

Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**

SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**

Category of wetland based on Special Characteristics

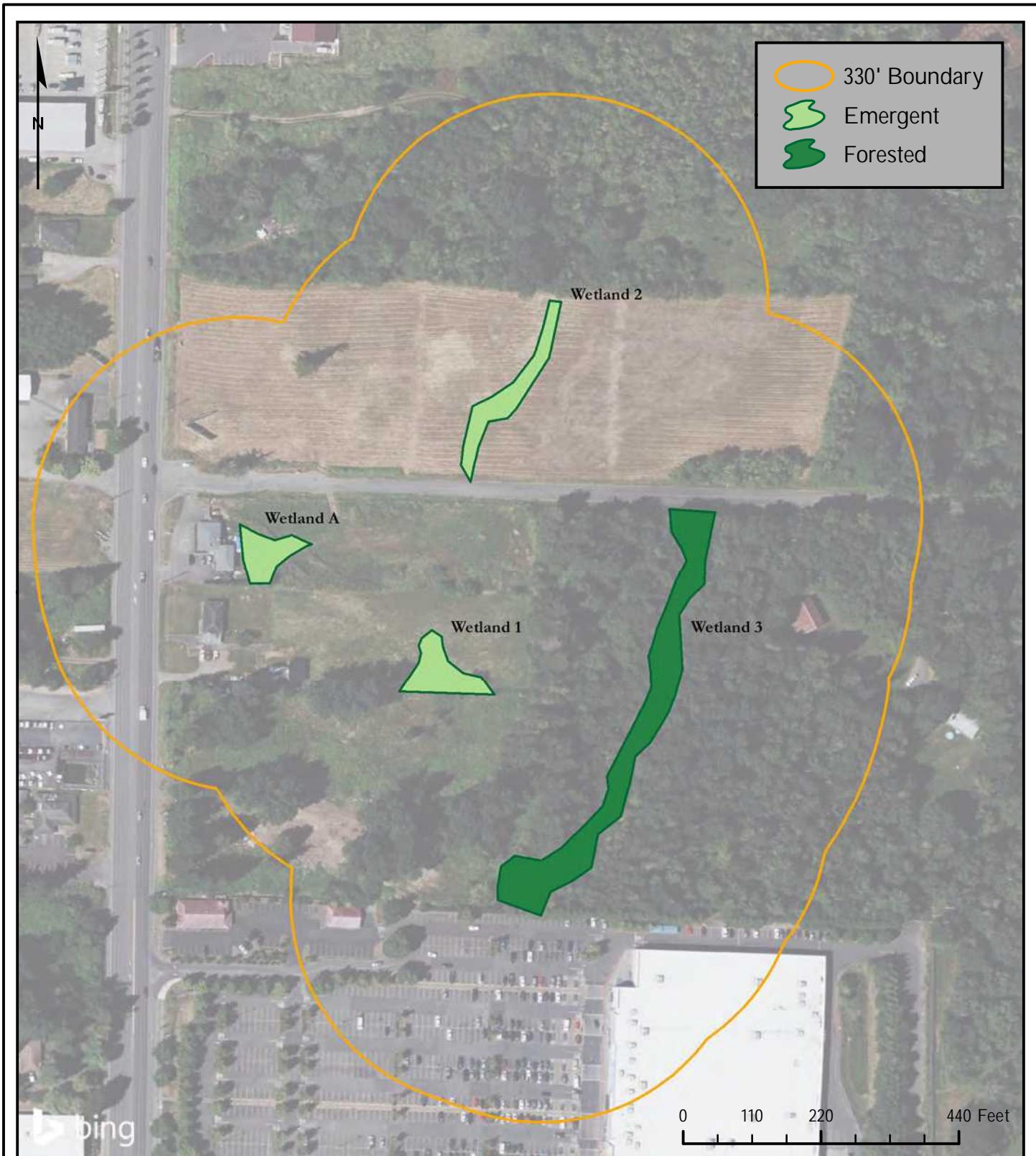
If you answered No for all types, enter "Not Applicable" on Summary Form

Wetland name or number A

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Appendix F -- Wetland Rating Figures

COWARDIN MAP



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2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

PHO REBUILD

4492 MERIDIAN ST
BELLINGHAM, WA 98226

WHATCOM COUNTY PARCEL NUMBER:
3803070325200000

DATE: 4/1/2022

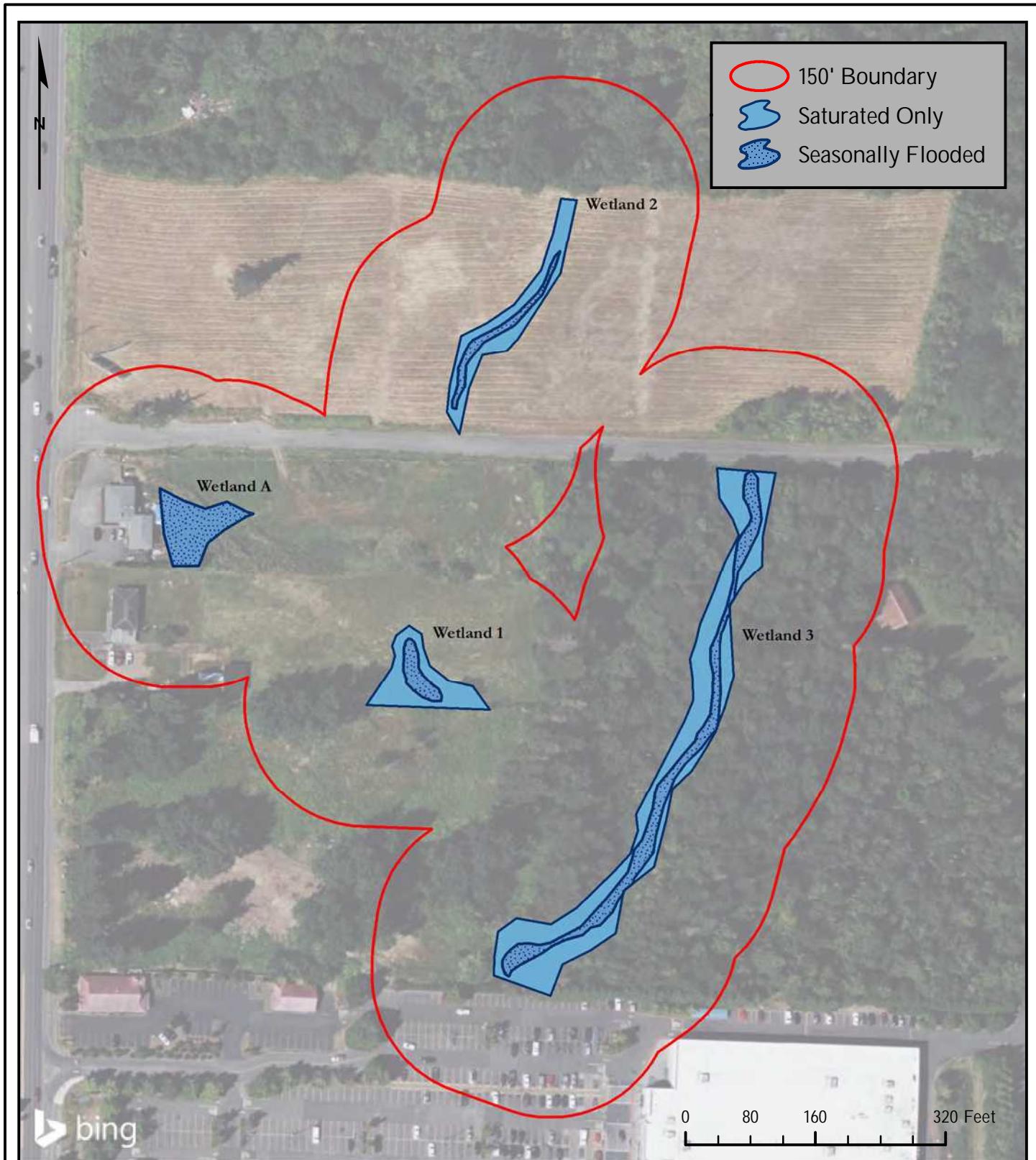
JOB: 2221.0003

BY: DDS

SCALE: 1" = 220'

FIGURE NO. 1 of 6

HYDROPERIOD MAP



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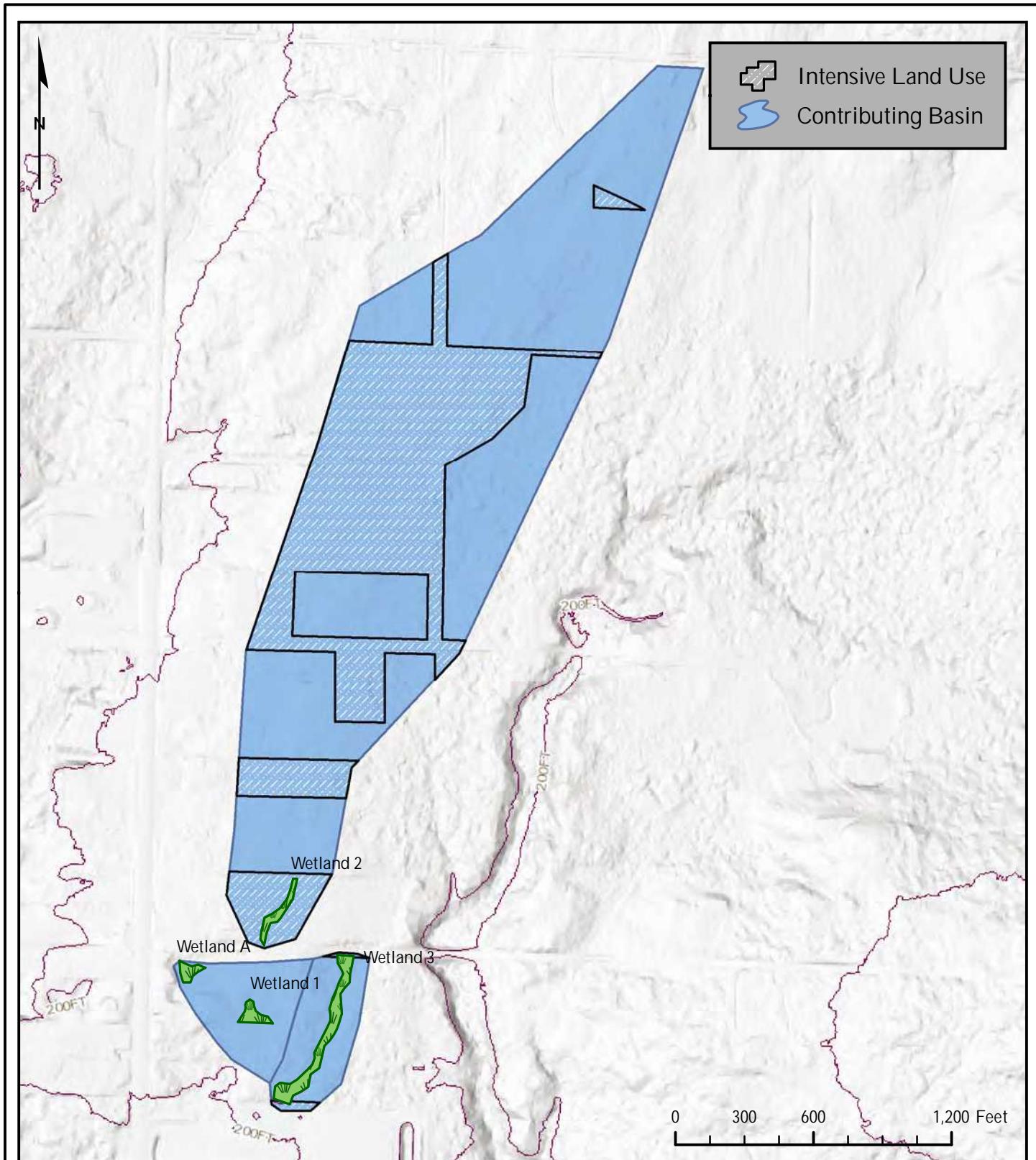
PHO REBUILD

4492 MERIDIAN ST
BELLINGHAM, WA 98226

WHATCOM COUNTY PARCEL NUMBER:
3803070325200000

DATE: 4/1/2022
JOB: 2221.0003
BY: DDS
SCALE: 1" = 170'
FIGURE NO. 2 of 6

CONTRIBUTING BASIN MAP



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PHO REBUILD

4492 MERIDIAN ST
BELLINGHAM, WA 98226

WHATCOM COUNTY PARCEL NUMBER:
3803070325200000

DATE: 4/1/2022

JOB: 2221.0003

BY: DDS

SCALE: 1" = 600'

FIGURE NO. 3 of 6

CONTRIBUTING BASIN TABLE

D.4

D.4.3

Area of Contributing Basin (SF)	475,992
Area of Wetland A (SF)	5,422
Percent of Wetland A within Contributing Basin	1.139%
Area of Intensive Human Land Uses (SF)	9,509
Percent of Intensive Human Land Use within Contributing Basin for Wetland A	2%
Area of Contributing Basin (SF)	279,859
Area of Wetland 1 (SF)	6,952
Percent of Wetland 1 within Contributing Basin	2.484%
Area of Intensive Human Land Uses (SF)	9,509
Percent of Intensive Human Land Use within Contributing Basin for Wetland 1	3%
Area of Contributing Basin (SF)	2,854,785
Area of Wetland 2 (SF)	8,548
Percent of Wetland 2 within Contributing Basin	0.299%
Area of Intensive Human Land Uses (SF)	1,139,154
Percent of Intensive Human Land Use within Contributing Basin for Wetland 2	40%
Area of Contributing Basin (SF)	183,348
Area of Wetland 3 (SF)	32,326
Percent of Wetland 3 within Contributing Basin	17.631%
Area of Intensive Human Land Uses (SF)	9,509
Percent of Intensive Human Land Use within Contributing Basin for Wetland 3	5%



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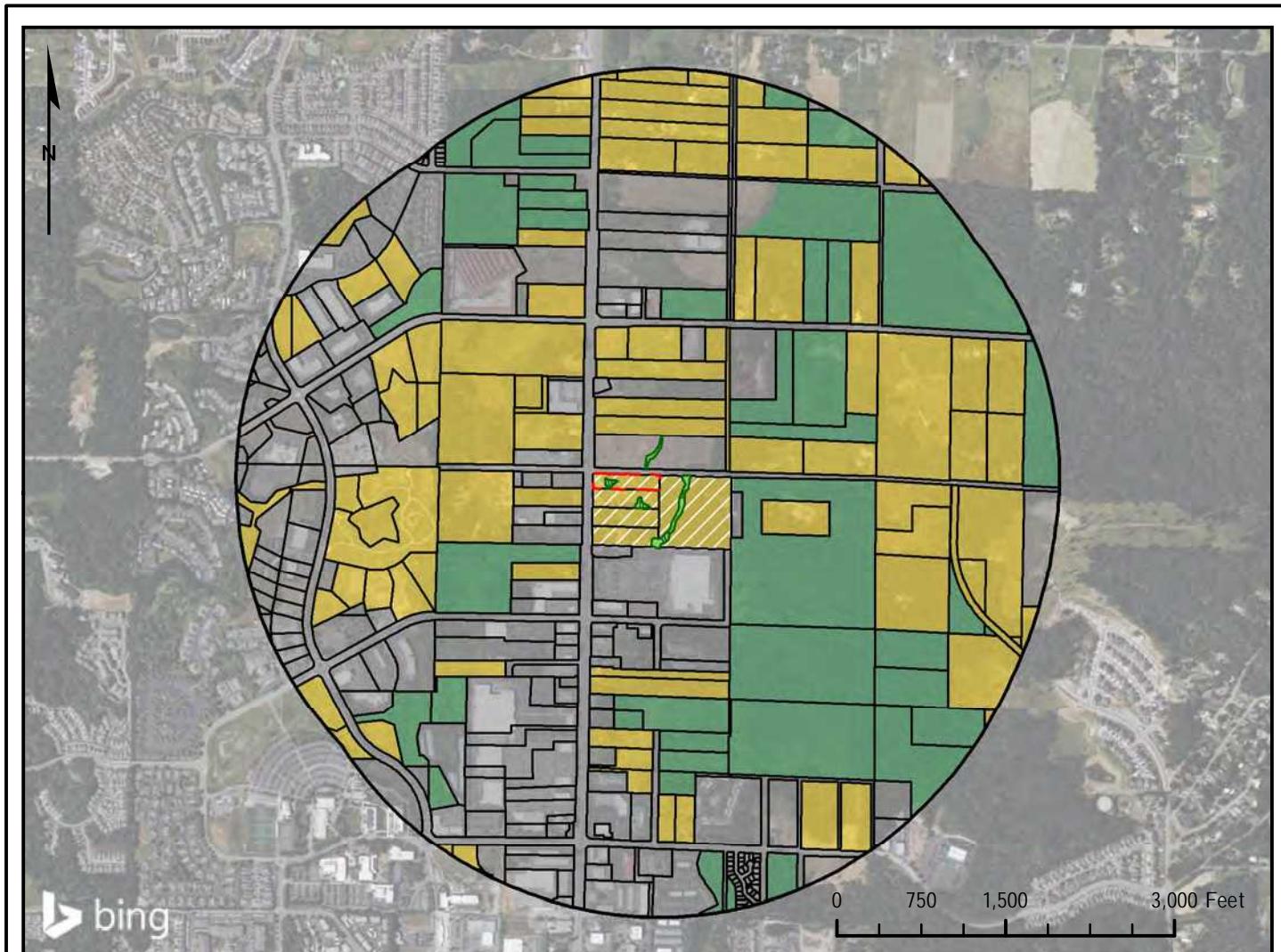
PHO REBUILD

4492 MERIDIAN ST
BELLINGHAM, WA 98226

WHATCOM COUNTY PARCEL NUMBER:
3803070325200000

DATE: 4/1/2022
JOB: 2221.0003
BY: DDS
SCALE: NONE
FIGURE NO. 4 of 6

HABITAT MAP



H.2.0 Wetlands A, 2, & 3

H.2.1

Abutting Undisturbed Habitat	0.00%
Abutting Moderate & Low Intensity Land Uses	1.83%
Accessible Habitat	0.92%

H.2.0 Wetland 1

H.2.1

Abutting Undisturbed Habitat	0.00%
Abutting Moderate & Low Intensity Land Uses	0.00%
Accessible Habitat	0.00%

H.2.2 All Wetlands

Undisturbed Habitat	25.62%
Moderate & Low Intensity Land Uses	34.73%
Undisturbed Habitat in 1 KM Polygon	42.98%

H.2.3 All Wetlands

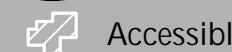
High Intensity Land Use in 1 KM Polygon	39.65%
---	--------



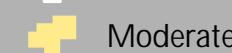
Wetlands



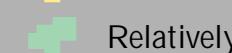
1 KM Polygon



Accessible Habitat



Moderate & Low Intensity



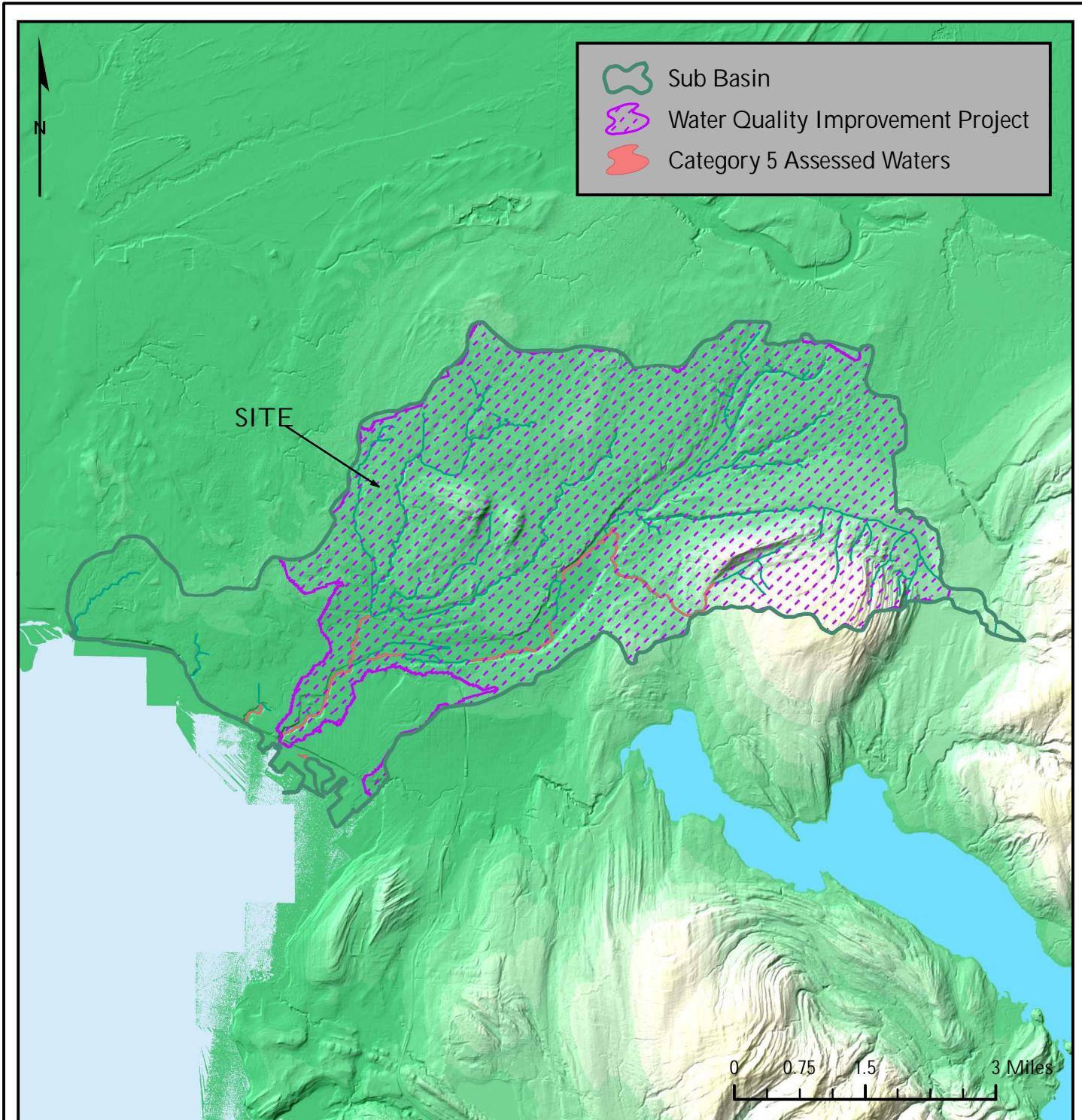
Relatively Undisturbed



High Intensity



Site Boundary



Name	Pollutants	TMDL ID	WRIA	Year Approved
Whatcom, Squalicum, and Padden Creek TMDL	Temperature	101	1	2011



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PHO REBUILD

4492 MERIDIAN ST
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WHATCOM COUNTY PARCEL NUMBER:
 3803070325200000

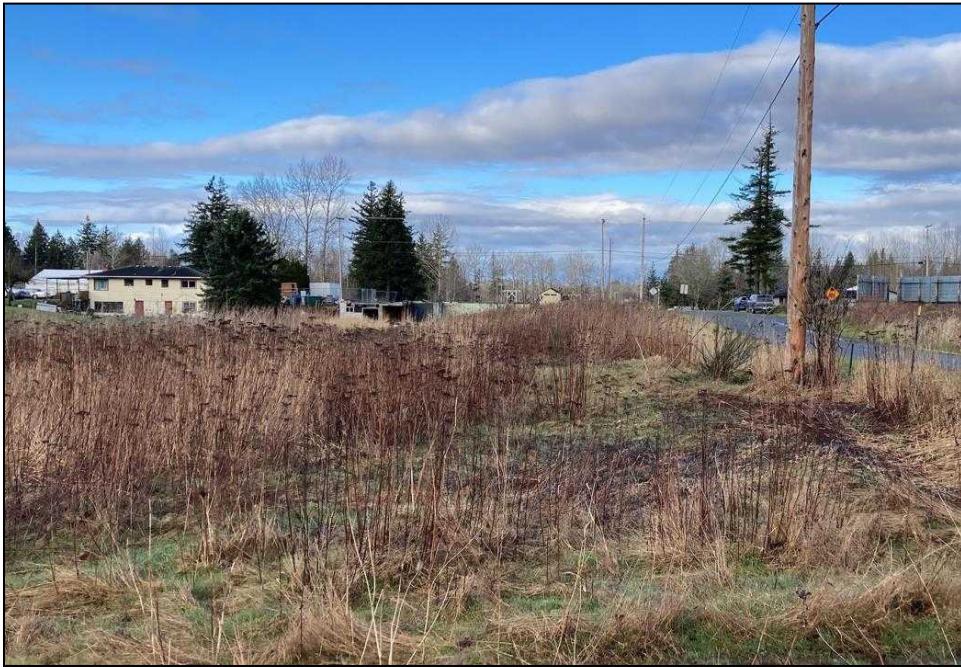
DATE: 4/1/2022
 JOB: 2221.0003
 BY: DDS
 SCALE: 1" = 2 mi
 FIGURE NO. 6 of 6

Appendix G — Site Photographs

General upland conditions on eastern portion of the subject property, facing south.



General upland conditions on the northern portion of the subject property, facing west.



General upland conditions on the central portion of the subject property, facing southeast.



Roadside ditch on south side of Van Wyck Road, facing east.



Wetland 1.



Wetland 2.



Wetland 3; note lack of defined channel, bed, or bank within unit



Appendix H -- NES Wetland Delineation Report (2013)



WETLAND DELINEATION REPORT

**PARCELS 380307098495 AND 380307135495
VAN WYCK ROAD
BELLINGHAM, WA**

September 2013

prepared for
Washington Federal
c/o Wayne Potter
Novastar Development, Inc.
18215 72nd Ave. South
Kent, WA 98032



prepared by
Northwest Ecological Services, LLC
1911 C Street
Bellingham, WA 98225
360.734.9484

EXECUTIVE SUMMARY

Northwest Ecological Services, LLC (NES) was retained to complete a wetland delineation of a site within the city limits of Bellingham, Washington. The review area includes two parcels (#380307 098495 and #380307 135495), encompassing an approximate 10.26 acre area bounded by Van Wyck Road to the north, Walmart to the south, and property lines on other remaining sides. The eastern parcel (#380307 135495) is a 0.89 acre lot with a single family residence. The western parcel (#380307 098495) is 9.37 acres and predominately undeveloped except for a barn and access road.

The delineation included identification of wetlands, streams, fish and wildlife habitat, and shorelines as observed within the review area. All information contained in this report is based on available information and site conditions at the time of the site visit. This report is intended for inclusion with future wetland, stream, and wildlife habitat permit applications to the City of Bellingham (COB), Washington State Department of Ecology (WDOE), Washington State Department of Fish and Wildlife (WDFW), and the U.S. Army Corps of Engineers (Corps), as may be required.

NES identified seven wetlands (Wetlands A, B, D, E, F, G, and H) within the review area. Wetland A is a palustrine forested (PFO), depressional, WDOE Category II wetland. Wetland B is a PFO/ palustrine scrub-shrub (PSS), riverine, WDOE Category II wetland. Wetlands D and E are PFO/ palustrine emergent (PEM), depressional, WDOE Category II wetlands. Wetland F is a PSS, depressional, WDOE Category III wetland. Wetlands G and H are PSS/ PEM, depressional, WDOE Category III wetlands.

Two streams were observed within the review area. Spring Creek is located just east for the project site. Spring Creek is mapped as fish bearing. The second stream is a seasonal drainage located within Wetland B. This drainage appears to be non-fish bearing.

The review area contains two apparent Habitat Conservation Areas (HCA) regulated by the COB Critical Areas Ordinance (CAO): Spring Creek and the drainage within Wetland B. WDFW mapping indicates three priority species within the review area: coastal cutthroat trout (*Oncorhynchus clarki*), coho salmon (*O. kisutch*) and winter steelhead (*O. mykiss*). These species are mapped within Spring Creek.

All site wetlands are expected to be under the jurisdiction of one or more regulatory agency: COB, WDOE, or the Corps. However, it appears that the COB does not regulate Wetlands F, G, and H and therefore no buffer applies. The COB CAO requires buffers on regulated wetlands. Buffers are dependent on land-use intensity. The current land-use is high intensity which is based upon zoning and development in the vicinity. Based on the COB CAO, Wetlands A, B, and D are expected to have a 150 foot standard buffer; and Wetland E is expected to have a

100 foot standard buffer. The standard buffer for Spring Creek, a fish bearing stream, is stated as between 75 and 150 feet.

NES QUALIFICATIONS

Northwest Ecological Services, LLC (NES) is a specialized, service-oriented environmental consulting firm based in Bellingham, Washington. We provide a range of biological services to both the public and private sectors. Our services include wetland assessments; biological assessments; wetland restoration and mitigation plans; natural resource analysis; environmental regulatory compliance; landscape and ecological design; and environmental impact assessments of plants, animals, fish and sensitive habitats. NES professionals have performed wetland and biological assessments on over 27,500 acres [1991-2012] in Whatcom, Skagit, Island, Snohomish and King Counties.

NES staff qualifications summary:

- Vikki Jackson is an ecologist with NES and has provided environmental consulting services within the north Puget Sound area since 1992. Ms. Jackson obtained a Masters in Science from Western Washington University with emphasis on ecological processes and wetlands. She is certified through the Society of Wetland Scientists (SWS) as a Professional Wetland Scientist (PWS), #000514.
- Michele Bodtke is an ecologist with NES and has been providing environmental services within the north Puget Sound area since 2002. Ms. Bodtke also has an extensive understanding of land-use laws. Ms. Bodtke has Bachelors of Science degree in Geology from Michigan State University, and a certificate in wetland science and management from the University of Washington.
- Analiese Burns is an ecologist with NES has provided environmental services within the north Puget Sound area since 2000. Ms. Burns obtained a Bachelors of Science in Biology from the University of Washington. She is certified through SWS as a PWS, #1618 and is a Leadership in Energy and Environmental Design® (LEED) Accredited Professional.
- Molly Porter is an ecologist with NES and has provided environmental services within the north Puget Sound area since 2004. Ms. Porter obtained a Bachelors of Science in Environmental Science from Huxley College of the Environment at Western Washington University. She is certified through SWS as a PWS, #2064.

DISCLAIMER

Wetland and stream delineations and determinations are based upon protocols defined in manuals and publications produced by federal, state and local agencies. The wetland methodology used in this report is consistent with methods described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Corps, 2010) and the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), as required by WAC 173-22-035. The findings were based on observations of conditions at the time of the site visit(s). This report is provided for the use of the named recipient only and is not intended for use by other parties for any other purpose. This report does not guarantee agency concurrence or permit approval.

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C: PHOTOGRAPHS

D: DATA SHEETS

E: WDOE WETLAND RATING FORMS

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1.0 INTRODUCTION

1.1 Scope of Work

Northwest Ecological Services, LLC (NES) was retained to complete a wetland delineation for a two parcels (#380307098495 and 380307135495) along Van Wyck Road in Bellingham, Washington. The delineation included identification of wetlands, streams, fish and habitat conservation areas, and shorelines as observed within the review area. It did not include identification of the following critical areas: geologically hazardous areas, frequently flooded areas, or critical aquifer recharge areas.

All information contained in this report is based on available information and site conditions at the time of the site visit. This report is intended for inclusion with future wetland, stream, and wildlife habitat permit applications to the City of Bellingham (COB), Washington State Department of Ecology (WDOE), Washington State Department of Fish and Wildlife (WDFW), and the U.S. Army Corps of Engineers (Corps), as may be required.

Project Proponent:

Washington Federal
c/o Wayne Potter
Novastar Development, Inc.
18215 72nd Ave. South
Kent, WA 98032
T: 425.656.7435

Wetland Delineation Report Prepared by NES staff:

Vikki Jackson, PWS
Northwest Ecological Services
1911 C Street, Bellingham, WA 98225
T: 360.734.9484
E-mail: vikki@nwecological.com

1.2 Project Location

The project site includes two parcels (#380307 098495 and #380307 135495) (Figure 1, Appendix B). The review area is within the city limits of Bellingham, Washington (Section 07, Township 37N, Range 03E, W.M.).

The review area is an approximate 10.26 acre area bounded by Van Wyck Road to the north, Walmart to the south, and property lines on other remaining sides. The eastern parcel (#380307 135495) is a 0.89 acre lot with a single family residence. The western parcel (#380307 098495) is 9.37 acres and predominately undeveloped except for a barn and access road.

2.0 METHODS

The delineation consisted of an office review of existing documentation followed by site visits and associated assessments. NES conducted the site investigation and assessments in accordance with methodology specific to each resource area (wetlands, streams, fish and wildlife habitats, and shorelines as described below.

2.1 Document Review

NES reviewed available maps, drawings, and applicable reports pertaining to the review area. Specifically, NES reviewed existing documents related to soils, hydrology, vegetation, wetlands, fish and wildlife habitats, and shorelines. The following is a list of resources reviewed for this project:

- Aerial Photographs- Google Maps (Google, 2012) (Figure 2)
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) *Soil Survey of Whatcom County Area, Washington*, NRCS Web Soil Survey (USDA, NRCS, 2013) (Figure 3)
- Washington Department Ecology Washington Coastal Atlas (WDOE, 2013)
- WDFW SalmonScape (WDFW, 2013a)
- WDFW Priority Habitats and Species (PHS) Data on the Web Interactive Map (WDFW, 2013b)
- WDFW Species of Concern Listing (WDFW, 2013c)
- City of Bellingham, City IQ Online Map Viewer (City of Bellingham, 2013)

2.2 Field Methods

2.2.1 Wetlands

The wetland delineation was conducted in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Corps, 2010) and the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). This methodology is consistent with the WDOE's requirements established in 2011 (WAC 173-22-035) and the City of Bellingham Critical Areas Ordinance (CAO). To make a positive wetland determination, this methodology requires evidence that at least one positive wetland indicator be found for each of three parameters (vegetation, soils, and hydrology). An area is not considered a regulatory wetland if the area lacks indicators for any one of these three parameters under normal environmental conditions. Upland/wetland boundaries are delineated by locating the transition where soils, vegetation, or hydrology no longer indicate that wetland parameters are met. Methods for each of these parameters are as follows:

- **Vegetation:** The plant community at each sample site is considered to be hydrophytic (wetland) vegetation if the vegetation exhibits indicators of hydrophytic vegetation as defined in the delineation methodology (Corps, 2010). Most often the "Dominance Test" is

used as the indicator. The sample plot meets the dominance test for hydrophytic vegetation if more than 50 percent of the dominant species from all strata have obligate wetland, facultative wetland, and/or facultative indicator status. Indicator status is taken from the Regional National Wetland Plant List (U.S. Army Corps of Engineers, 2012a and U.S. Army Corps of Engineers, 2012b). Dominant species are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum (absolute percent cover), plus any other species that, by itself, accounts for at least 20 percent of the total. The wetland indicator status for each dominant species is then used to determine whether the plant community is dominated by hydrophytic vegetation. Occasionally, the "Prevalence Index" is used as the indicator of hydrophytic vegetation. The Prevalence Index is a weighted-average of all plant species in the sample plot.

- **Soils:** Soil test pits are hand dug to approximately 20 inches and soils are examined for hydric soil indicators. Formal soil test pits are labeled with a sample plot number and located on the delineation map. Soil color, including concentrations, depletions, or gleying, if present, are colored using a Munsell color chart (Gretag-Macbeth, 2000). *Field Indicators of Hydric Soils in the United States* (USDA, NRCS, 2010) is used to determine hydric soil presence or absence.
- **Hydrology:** Wetland hydrology is assessed by an inspection at representative sample plots. Depth to shallow groundwater and/or saturation in each sample plot is recorded, as are observations of other indicators of hydrology including but not limited to water marks, drift lines, sediment deposits, and drainage patterns. These data provide information on timing and duration of ponding and/or saturation in the study area.
- **Growing Season:** Vegetation and hydrology indicators are dependent upon conditions during the "growing season". The growing season, as defined by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*, is when non-evergreen plants show biological activity (plant growth) and/or the soil temperature at 12 inches below the surface is a minimum of 41 degrees Fahrenheit (F) (Corps, 2010).

2.2.2 Streams

If streams were identified on the property, NES flagged the ordinary high water mark (OHWM) consistent with state law as defined in RCW 90.58.030. NES used field indicators to determine the OHWM of any existing stream based on the methodology contained in *Determining the Ordinary High Water Mark on Streams in Washington State* (Olson and Stockdale, 2010), Ecology Publication #08-06-001. During the site visits, the investigating ecologists also completed a stream characterization of basic stream attributes including depth, vegetation, substrate, and habitat features.

2.2.3 Fish and Wildlife

NES documented observations of any state Priority species or federal Threatened, Endangered, or Candidate species protected under the Endangered Species Act (ESA) during the site visits.

NES also reviewed the site for general wildlife habitat conditions and habitat connectivity. If streams were present, NES documented any obvious fish passage barriers, characterized general stream attributes (as described above), and documented any observations of fish during the site visits.

2.2.4 Shorelines

NES reviewed the local SMP text and maps to determine the potential presence of a regulated shoreline within the review area. During the site visits, NES field verified the presence of any shoreline and determined the extent of SMP jurisdiction based on SMP mapping, OHWM, floodways, wetlands, and floodplains. If shorelines were present, NES determined the OHWM consistent with state law as defined in RCW 90.58.030 and described under Fish and Wildlife, above.

3.0 FINDINGS

Vikki Jackson, PWS and Molly Porter, PWS, NES ecologists, conducted a site visit on August 14, 2013. The following description is based on observations from the site visits and information gathered during the document review. Photographs taken at the time of the site visits are included in Appendix C.

3.1 Landscape Setting and Parcel Overview

3.1.1 Document Review

The following provides a summary of the findings contained within documents reviewed:

- **Aerial Photograph- Google Maps (Figure 2)**
Aerial photographs show two buildings present on the east side of the review area. Vegetation on site is dominantly forest with a pasture area between the buildings. Surrounding parcels are developed with single family homes on acreage and a commercial development to the south (Walmart).
- **Surface Water Delineation Boundaries in WRIA 1, Version 3 Draft**
The review area is located in the Spring Creek basin of the Squalicum Creek Watershed in Water Resource Inventory Area (WRIA) 1.
- **USDA, NRCS Soil Survey of Whatcom County Area, Washington (Figure 3)**
The NRCS soil survey (USDA, NRCS, 2013) maps three soil units within the review area: Whatcom silt loams (#179 and #181), and Whatcom-Labounty loam (#182).

Whatcom silt loam (#179 and #181) is a moderately well drained soil typically located on hill slopes. The soil has a seasonally high water table at depth of 18 to 36 inches below the surface. Whatcom silt loams are in hydrologic group C.

Whatcom silt loam is indicated to be non-hydric, but this soil series also contains hydric soil inclusions.

Whatcom Labounty silt loam (#181) is composed of two map units that are intermingled. The Whatcom silt loams are consistent with the above description. Labounty silt loams are typically found in depressions. This soil has a seasonally high water table at a depth of 0 to 12 inches below the surface. Labounty silt loams are in hydrologic group C/D and are indicated to be hydric, but this soil series also contains non-hydric soil inclusions.

3.1.2 Field Observations

The review area lies within a rural residential area abutting high intensity commercial uses in the City of Bellingham. Parcels surrounding the site are primarily single family homes on acreage, however the lot south of the review area is a high intensity commercial use (Wal-Mart). Two buildings are present on the eastern side of the review area, one residence and the other is a barn. The review area is zoned Industrial for the western parcel and residential multifamily for the eastern parcel. Vegetation in the majority of the review area is mixed forest with a pasture area between the barn and the residence. The review area slopes gently to the east and west with greater slopes around two drainages located on the east and west sides of the review area. The site contains upland and wetland as described below.

3.2 Wetlands

The review area contains seven wetlands (Wetlands A, B, D, E, F, G and H) (Figure 4, Appendix B).

3.2.1 Document Review

The following provides a summary of the findings contained within documents reviewed:

- WDOE Shoreland Coastal Atlas (CA) Map**

The CA map does not identify any wetland on the subject site, but shows two palustrine emergent wetlands approximately 100 feet west of the site.

3.2.2 Field Observations

NES identified seven wetlands within the review area. Most site wetlands are located on a relatively flat plateau between two drainages. NES documented wetland conditions at four sample plot (Sample Plots 01, 03, 04, and 06). Larry Steele and Associates surveyed the delineation flags, and Figure 4 (Appendix B) depicts the surveyed location of the wetlands and sample plots within the review area. Data sheets from the delineation are located in Appendix D of this report. Wetlands identified are summarized in Table 1 and a description of each wetland is provided below.

Table 1. Wetland Classification Summary

Wetland	Hydrogeomorphic Class	Cowardin Classification	On-site Size (square feet)
Wetland A	Depressional	PFO	21,781
Wetland B	Riverine	PFO/PSS	17,951
Wetland D	Depressional	PFO/PEM	20,045
Wetland E	Depressional	PFO/PEM	5,340
Wetland F	Depressional	PSS	501
Wetland G	Depressional	PSS/PEM	852.5
Wetland H	Depressional	PSS/PEM	396

(PFO: Palustrine Forested; PSS: Palustrine Scrub-Shrub; PEM: Palustrine Emergent)

Wetlands A, D and E

These wetlands are a palustrine forested (PFO)/palustrine emergent (PEM), depressional wetlands. Representative species observed in these wetlands included: red alder (*Alnus rubra*), western red cedar (*Thuja plicata*), black cottonwood (*Populus balsamifera*), salmonberry (*Rubus spectabilis*), skunk cabbage (*Lysichiton americanum*), water parsley (*Oenanthe sarmentosa*), American speedwell (*Veronica americana*), American bugleweed (*Lycopus americanus*) and lady fern (*Athyrium filix-femina*). Species observed in the PEM community included creeping buttercup (*Ranunculus repens*), American brooklime, and tall mannagrass (*Glyceria elata*). The PEM habitats are located in open areas of the canopy. There are also large un-vegetated within the wetlands, that appear to be portions of the wetland that experience long duration inundation and preclude vegetation establishment. A portion of Wetland D extends into the field south of the single family house. This areas includes typical pasture species including soft rush (*Juncus effusus*), velvet grass (*Holcus latnatus*), bentgrass (*Agrostis* sp.), creeping buttercup and reed canarygrass (*Phalaris aruninacea*).

NES documented representative soil samples in Wetlands A, D and E at Sample Plots 01, 04, and 06. In general, the topsoil was dark brown to grey (10YR 3/1, 7.5YR 3/1, or 2.5Y 2.5/1) mucky or clayey silt loam topsoil overtopping a dark grey (10YR 5/1) silt loam or dark grayish brown (10YR 4/2) silt loam with concentrations. Soil in these sample plots met NRCS hydric soil indicator F3 (Depleted Matrix) or A11 (depleted below dark surface) (USDA, NRCS, 2010).

These wetlands appear to receive the majority of hydrology from runoff from their immediate surrounding basins along with direct precipitation. At the time of the site visit, the wetland soils were lightly damp. Positive indications of wetland hydrology included: Sparsely Vegetated Concave Surface (B8); and Water-stained Leaves (B9). These wetlands appear to be ponded with up to 18 inches of water in the winter and spring.

No outlet was observed for Wetland A and E, but Wetland D may overtop in two locations on its east side. The outflow of Wetland D would flow down slope into Spring Creek. Wetlands A and E are located in depressions on a perched flat area between two drainages. These wetlands contain water that would otherwise be directed into Spring Creek or the drainage on the west side of the parcel. Wetland A may have a seasonal or occasional outlet that flows into Wetland B. Additional wet season field work would be needed to document the presence of an outlet.

Wetland B

Wetland B is located in a well define swale on the west side of the parcel. A seasonal drainage is associated with the wetland and enters the wetland via a culvert under Van Wyck Road and appears to flow southwest and exits via a small culvert that disappears underground in the southwest corner of the parcel.

Wetland B is a PFO/ palustrine scrub-shrub (PSS), riverine wetland. Vegetation in the wetland was dominated by red alder, black cottonwood, western red cedar, salmonberry (*Rubus spectabilis*), vine maple (*Acer circinatum*), skunk cabbage (*Lysichiton americanum*), lady fern, American brooklime, mannagrass, lady fern, tall horsetail (*Equisetum telmateia*), and reed canarygrass.

NES documented a representative soil sample in this wetland at Sample Plot 03. The soil was a very dark grey (2.5Y 3/1) clay loam with 5% 10YR 4/4 concentrations in the matrix. Soil in Sample Plot 03 met NRCS hydric soil indicator F6 (Redox Dark Surface) (USDA, NRCS, 2010).

Wetland B occupies the bottom of a well defined swale that runs along the west side of the parcel. The wetland appears to be feed primarily by a seasonal drainage that enters the wetland at the north end via a culvert. The water exits in the southwest corner of the parcel via a very small culvert (4 to 6" diameter, partially blocked). The reduced sizes of the outlet culvert appears to back up flow and there is evidence (sediment marks) on vegetation above the wetland boundary. Surface runoff from the surrounding slopes also contributes hydrology to the wetland. At the time of the site visit, the wetland had damp soils. Wetland hydrology indicators included: Sparsely Vegetated Concave Surfaces (B) and Drainage Patterns (B10) and Geomorphic Position (D2).

Wetlands F, G and H

Wetlands F, G, and H are similar and will be discussed together. These wetlands are all small, depressional wetlands with no identifiable outlet. Wetlands G and H are PSS/ PEM wetlands dominated by creeping buttercup, with scattered salmonberry. Wetland F is a PSS wetland dominated by a large black twinberry (*Lonicera involucrata*).

Soils within this wetlands was very similar to the other on-site wetlands with a very dark brown grey (10YR 3/1) silt to clay loam with concentrations in the matrix.

Wetland F, G, and H appear to receive water from direct precipitation, surface run-off, and/or a seasonally high water table. At the time of the site visit, the wetlands had damp soils, with indicators of wetland hydrology including water stained leaves and drainage patterns. It appears that these wetlands are also seasonally saturated and little seasonal ponding occurs (possibly ponding could occur in Wetland F). No outlets were identified during this review, however the review took place in the dry season so they may be present, particularly for wetlands G and H.

3.2.3 Wetland Categorization and Functional Assessment

NES categorized the identified wetlands using the WDOE Wetland Rating System for Western Washington, revised 2006 (Rating System) (Hruby, 2004) and the associated wetland rating form (October 2008). This methodology identifies and quantifies the potential of various functions operating within a wetland. The determination is based on the physical characteristics of water quality, hydrologic, and habitat functions in the wetland and buffers. Using this system, wetlands are given a score based on the functions provided by the wetland, and are classified as Category I through Category IV.

Wetland function (potential and opportunity) was determined using the WDOE Rating System, per recent guidance from WDOE (Hruby, 2006) and best professional judgment. The NES ecologist converted the Rating System scores to a qualitative rating of "High", "Medium", and "Low" based on WDOE guidance. The qualitative rating provides more accuracy when comparing wetlands and evaluating their current status. The ecologist did not include a qualitative rating for the opportunity for water quality and hydrologic functions because the opportunity is either present or not. Instead, the table reflects the presence of opportunity as "Yes" and absence as "No" based on answers provided in the rating sheets. The qualitative ratings for specific habitat functions are based on NES ecologist's best professional judgment. A summary of WDOE rating and scores is shown in Table 2.

The Rating System was designed and tested for wetlands ≥ 4,000 square feet in size. The Rating System scores and categories are not as robust for wetlands below this threshold and results should be used with caution. Wetland D is smaller than 4,000 square feet in size and Wetlands B, C, and E are just slightly larger than 4,000 square feet in size, but we believe the assessment below accurately describes their functions.

Table 2. Wetland Functional Assessment

Functional Value or Score	Qualitative Rating of Function						
	Wetland						
	A	B	D	E	F	G	H
Total WDOE Score	62	63	59	55	50	32	32
WDOE Category	II	II	II	II	III	III	III
Overall Water Quality Potential	M	H	M	M	M	M	M
Overall Water Quality Opportunity? (Y/N)	N	Y	Y	Y	Y	N	N
Overall Hydrologic Potential	H	M	M	M	M	L	L
Overall Hydrologic Opportunity? (Y/N)	Y	Y	Y	Y	Y	Y	Y
Total Habitat Score	28	21	21	19	14	16	16
Overall Wildlife Habitat Potential	M	M	M	L	L	L	L
Overall Wildlife Habitat Opportunity	H	H	H	H	M	M	M
Specific Habitat Functions:							
Vegetation Structure	M	M	M	M	L	L	L
Habitat Features	M/H	M	M/H	M	L	L	L
Buffer Quality	H	H	M/H	M	M	H	H
Priority Habitats	M	M	M	M	L	L	L
Habitat Connectivity	H	H	H	H	H	H	H

(H: High, M: Medium, L: Low, Y: yes, N: no)

Wetland A

Wetland A is a PFO, depressional, Category II wetland. The wetland has moderate *potential* to perform water quality functions. The wetland contains persistent woody vegetation over more than half the wetland area which increases the wetland ability to capture and filter pollutants. A substantial area of the wetland appears to be seasonally ponded, which further improves its water quality treatment functions. Wetland A currently does NOT have the *opportunity* to provide water quality improvement functions because it is primarily surrounded by natural forest.

Wetland A has a high *potential* to perform hydrologic functions. The wetland has no apparent outlet and appears to have between 0.5 and 2 feet of live storage during the wet season. The contributing basin to this wetland is relatively small compared the actual wetland size, but the wetland overall is quite small when compared to the larger Spring Creek basin. Wetland A appears to have the *opportunity* to provide erosion and flood protection because it is located in the Spring Creek basin which supports salmonids. The wetland functions to contain water that would otherwise flow directly into Spring Creek and moderate floods and erosion.

Wetland A has moderate *potential* and high *opportunity* to provide wildlife habitat functions. The wetland has moderate to high vegetation structure, species diversity, and hydroperiod diversity. The wetland has large amounts of downed wood. The buffer is high quality and is connected to a large biodiversity corridor extending to King Mountain. Forested uplands dominate areas between other wetlands provide good cover, and there are several wetlands nearby.

Wetland B

Wetland B is a PFO/PSS, riverine, Category II wetland. The wetland has high *potential* to perform water quality functions. The wetland contains persistent woody vegetation over more than two-thirds of the wetland area which increases the wetland ability to capture and filter pollutants. A substantial area of the wetland appears to be seasonally ponded, which further improves its water quality treatment functions. Wetland A currently does have the *opportunity* to provide water quality improvement functions it receives untreated water from Van Wyck Road and an upstream graded area.

Wetland B has a moderate *potential* to perform hydrologic functions. The wetland is fairly narrow in most areas and with an average wetland width to stream width ration of less than 1:5. The wetland is vegetated with persistent woody vegetation that covers more than two-thirds of the wetland area in most locations. The wetland has the opportunity to reduce downstream flooding since there are developed commercial lands downstream of the wetland.

Wetland B has moderate *potential* and high *opportunity* to provide wildlife habitat functions. The wetland has moderate vegetation structure, species diversity, and hydroperiod diversity. The wetland contains moderate amounts of downed wood. The buffer is high quality and is connected to a large biodiversity corridor extending to King Mountain. Forested uplands dominate areas between other wetlands provide good cover, and there are several wetlands nearby.

Wetlands D and E

Wetland D and E are PFO/PEM, depressional, Category II wetlands. The wetlands have moderate *potential* to perform water quality functions. The wetlands contain persistent woody vegetation over more than half the wetland area which increases the wetland ability to capture and filter pollutants. Wetland E has no apparent outlet which increases is water quality functions; and Wetland D has a seasonal outlet. Wetlands D and E currently have the *opportunity* to provide water quality improvement functions because both wetlands are located near potentially pollution generating surfaces.

Wetlands D and E have a moderate *potential* to perform hydrologic functions. Wetland E has no apparent outlet and appears to contain between 0.5 and 2 feet of live storage during the wet season. Wetland D appears to have a seasonal outlet, but also has between 0.5 and 2 feet of live storage during the wet season. The contributing basins to both wetlands are relatively small

compared the actual wetland size, but the wetlands overall are quite small when compared to the larger Spring Creek basin. Both wetlands appear to have the *opportunity* to provide erosion and flood protection because it is located in the Spring Creek basin which supports salmonids. Wetland D outflows into a swale that is directed to Spring Creek. The wetlands function to contain water that would otherwise flow directly into Spring Creek and moderate floods and erosion.

Wetlands D and E have a low to moderate *potential* and high *opportunity* to provide wildlife habitat functions. The wetlands have moderate vegetation structure, species diversity, and hydroperiod diversity. The wetlands have frequent amounts of downed wood. The buffer is high quality and is connected to a large biodiversity corridor extending to King Mountain. Forested uplands dominate areas between other wetlands provide good cover, and there are several wetlands nearby.

Wetlands F, G and H

Wetland F, G and H are similar and will be discussed together. These wetlands are PSS (Wetland F) or PSS/PEM (Wetlands G and H), depressional, Category III wetlands. The wetlands have moderate *potential* to perform water quality functions. The wetlands contain persistent woody or herbaceous vegetation over approximately half the wetland area which allows the wetland ability to capture and filter pollutants. These wetlands have no apparent outlet which increases water retention and treatment time within the wetlands. Wetland F currently does have the *opportunity* to provide water quality improvement functions because it is located near potentially pollution generating surfaces. However Wetlands G and H have forested buffers and do not have the opportunity to provide water quality improvement functions.

Wetlands F, G and H have low to moderate *potential* to perform hydrologic functions. All three wetlands lack outlets, but have limited storage capacity (a couple of inches on average). The contributing basins to these wetlands are relatively small compared the actual wetland size, and the wetlands overall are quite small when compared to the larger Spring Creek basin. These wetlands appear to have the *opportunity* to provide erosion and flood protection because they are located in the Spring Creek basin which supports salmonids. The wetlands function to contain water that would otherwise flow directly into Spring Creek and moderate floods and erosion.

Wetlands F, G, and H have a low *potential* and moderate *opportunity* to provide wildlife habitat functions. The wetlands have low vegetation structure, limited species diversity, and single hydroperiod classes. Habitat features are lacking within these wetlands. The buffer is high quality and is connected to a large biodiversity corridor extending to King Mountain, although Wetland F is located adjacent to a large commercial facility (Walmart to the south). Forested uplands dominate areas between these and other wetlands. Upland forest provides good cover and there are several wetlands nearby.

3.3 Upland Areas

3.3.1 Document Review

- WDOE Shoreland Coastal Atlas (CA) Map

The CA map does not identify any wetland on the subject site, but shows two palustrine emergent wetlands approximately 100 feet west of the site.

3.3.2 Field Observations

Upland is located throughout much of the review area. Vegetation in upland is predominately mixed forest, but a fallow pasture/lawn is located between the single family residence and the barn.

The majority of the site is vegetated with a mixed native forest. Species observed in this community included: Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), big leaf maple (*Acer macrophyllum*), paper birch (*Betula papyrifera*), red alder, vine maple, Indian plum (*Oemleria cerasiformis*), salmonberry, lady fern, sword fern (*Polystichum munitum*), snowberry (*Symporicarpos albus*), low Oregon grape (*Mahonia nervosa*), false lily-of-the-valley (*Maianthemum dilatatum*), northern starflower (*Trientalis borealis*) and trailing blackberry (*Rubus ursinus*).

Vegetation in the upland pasture areas included: orchard grass (*Dactylis glomerata*), bluegrass (*Poa sp.*), bentgrass, creeping buttercup, Canadian thistle (*Cirsium arvense*), tall fescue (*Festuca arundinacea*), and thickets of Himalayan blackberry.

Species observed in uplands on site that are listed on the Whatcom County Noxious Weed List (NWCB, 2013) include: Himalayan blackberry, holly (*Ilex sp.*), and Canadian thistle.

NES documented upland soils at two locations: Sample Plots 02, and 05 (Figure 4, Appendix B). Soil in most upland areas was similar. Soil in upland sample plots had upper soils with dark brown (10YR 3/3) silt loam with no redox concentrations. Sample Plot 02 also had a sub-soil that was a dark yellowish brown (10YR 4/4) silt loam with no redox concentrations. None of the upland areas met NRCS indicators for hydric soils (USDA, NRCS, 2010).

Soil in all upland sample plots was dry to the bottom of the 20 inch pit during both site visits, and no other indicators of hydrology were observed.

3.4 Streams

Two streams were observed within the review area: Spring Creek and a seasonal drainage located in Wetland B.

3.4.1 Document Review

The following provides a summary of the findings contained within documents reviewed:

- **WDFW SalmonScape (WDFW, 2013a)**

WDFW SalmonScape mapping system shows Spring Creek passing near the eastern property boundary. The seasonal drainage (Wetland B) is not shown. From the property, Spring Creek flows approximately 1.44 miles southwest to confluence with Baker Creek. Baker Creek flows 0.57 miles southwest and flows into Squalicum Creek, which in turn flows 1.3 miles south and into Bellingham Bay.

3.4.2 Field Observations

Two streams were observed on-site. Spring Creek enters the review area from under Van Wyck Road via a 6 foot (+/-) steel culvert on the east side of the review area. The stream flows in a well developed forested ravine. The stream was observed at low flow. Much of the channel was dry at the time of site visit but wetted pools were frequent and well developed. Water was flowing subsurface through the pools. Fish were observed in most pools and included salmonid (likely cutthroat trout fingerlings with occasional 4 or 5 inch individuals) and three-spine sticklebacks. The channel had a cobble substrate with little to no embeddness. The channel width ranged between 8 feet and was as large as 20 feet in the review reach.

The seasonal drainage (within Wetland B) entered the parcel near the northwest corner of the site via an 8" culvert from under Van Wyck Road. No evidence of a stream was observed upstream of the Van Wyck Road, and it appears the stream first forms on the subject parcel. Water was not present within the stream at the time of the site visit, but evidence of surface water was observed including drainage patterns, silt marks, and sediment deposits. The channel is located within Wetland B and ranges from a 2 foot channel to non-existent as it passes through wider portions of the wetland. The stream outlets via a small 6" concrete (partially blocked) culvert along the south boundary. It is unknown where this culverts outlets to, but it may pass under the Walmart Parking area. This stream appears to flow during the wet season (December through June). There is no evidence of fish presence in this system, and access does seem possible through the culverts.

3.5 Fish and Wildlife

The review area contains two apparent Habitat Conservation Areas (HCA) regulated by the COB Critical Areas Ordinance (CAO): the two streams. The WDFW maps indicate three priority species within the review area: coastal cutthroat trout (*Oncorhynchus clarki*), coho salmon (*O. kisutch*) and winter steelhead (*O. mykiss*). These species are mapped within Spring Creek. Records indicate coastal cutthroat trout and coho salmon within the reviewed reach as individual occurrences and for migration. For winter steelhead, records indicate habitat within the reviewed reach may provide breeding habitat for this species in the winter.

No fish are mapped in the seasonal stream in Wetland B.

3.5.1 Document Review

The following provides a summary of the findings contained within documents reviewed:

- **WDFW SalmonScape (WDFW, 2013a)**

WDFW SalmonScape mapping documents the presence of the following species in Spring Creek: coho salmon and winter steelhead.

Puget Sound coho salmon in this location are not federally listed but are listed as a Priority species by Washington State. Puget Sound winter steelhead is listed as federally Threatened and a Washington State Priority species.

- **WDFW PHS Data on the Web Interactive Map**

WDFW maps indicate three priority species within Spring Creek: Coastal cutthroat trout, coho salmon and winter steelhead.

Puget Sound coho salmon and winter steelhead protections are listed above. Resident cutthroat trout are a Washington State Priority species.

WDFW maps also indicate a mapped Biodiversity Corridor approximately one-half mile east of the review area.

3.5.2 Field Observations

NES did not observe any federal Threatened, Endangered, or Candidate species or associated habitats within the review area. NES potentially observed one Priority wildlife species and evidence of a second species during our site review. Salmonids were observed in the stranded pools of Spring Creek, these were likely either cutthroat trout or coho salmon juveniles. Both are Washington State Priority species. Additionally there was evidence (foraging cavities in trees) of Pileated Woodpecker (*Dryocopus pileatus*) in several locations within the forested habitat on the site. Pileated woodpeckers are a Washington State priority species, but have no Federal listing status.

The mapped Biodiversity Corridor is north of King Mountain. The area between this corridor and the review area is forested and there is excellent connection for wildlife between the project site and the Biodiversity Corridor.

The review contains forested wetland habitat that provide suitable habitat for wildlife species that occupy mixed forest and wetland habitats including deer, songbirds, small mammals that can tolerate urban environments. The pasture area provides some habitat for wildlife species that utilize fallow fields for foraging such as coyote, voles, raptors, and rabbits. The parcel is well connected to a large tract (over 600 acres) of forested habitat to the north and east. High intensity land use to the south and the Guide Meridian to the west limit connections for wildlife to habitats in those directions.

3.6 Shorelines

The subject site is not within the jurisdiction of the COB Shoreline Master Program (SMP).

3.6.1 Document Review

The following provides a summary of the findings contained within documents reviewed:

- **COB SMP Code and Map (COB, 2013b)**

The subject site is not within the jurisdiction of the COB SMP.

3.6.2 Field Observations

Field observations confirm COB mapping.

4.0 REGULATIONS

Agencies with regulatory authority over site wetlands, streams, fish and wildlife habitats, and/or shorelines are summarized in Table 3. A regulatory summary for each agency is provided below.

Table 3. Regulatory Summary

Feature	WDOE Category	Corps Hydrologic Classification	Regulatory Authority				Regulated Buffer* (ft)
			City of Bellingham	Corps	WDOE	WDFW	
Wetland A	II	Unknown	X	?	X		150
Wetland B	II	Adjacent to an RPW	X	X	X	X	150
Wetland D	II	Adjacent to an RPW	X	X	X	X	150
Wetland E	II	Isolated	X		X		100
Wetland F	III	Isolated			X		
Wetland G	III	Isolated			X		
Wetland H	III	Isolated			X		
Spring Creek	n/a	RPW	X	X	X	X	75-150

4.1 City of Bellingham

4.1.1 City of Bellingham Critical Areas Ordinance

The COB Critical Areas Ordinance (CAO) states that no activity may be conducted within a regulated wetland, stream, or buffer without Critical Areas review and approval. Activities impacting regulated wetlands generally must provide mitigation sufficient to maintain or

enhance the wetland functions. The project area contains the following wetlands, streams, and HCAs under the jurisdiction of the COB CAO:

- Wetlands A, B, D, E, and Spring Creek

The COB does not appear to regulate Wetlands F, G, and H because they are smaller than 1,000 square feet and meets other criteria in 16.55.270(B). All other site wetlands are Category II or III wetlands and are larger than 4,000 square feet, or meet other requirements outlined in 16.55.270(C). Therefore, the COB appears to regulate Wetlands A, B, D, and E.

The COB requires a buffer around regulated critical areas to protect functions. The buffer must remain naturally vegetated except where it can be enhanced to improve the functions. Buffers are measured from the wetland edge. Standard wetland buffer widths are determined according to proposed or existing land use intensity, the overall wetland category, and the habitat rating. A high intensity land use currently applies to this site based on zoning of this area.

The COB regulates streams as HCAs. The buffer on most streams is determined based on fish presence/ absence. Spring Creek is a Type 3 (Fish bearing stream), and therefore requires a 75 to 150 foot buffer.

The COB requires that buildings and other structures are **setback a minimum of 15 feet from the edge of critical area buffers**, or from the critical areas where no buffer is required. Uses allowed within the 15-foot setback include: landscaping; uncovered decks; building overhangs; impervious surfaces such as driveways, roads, parking lots, and patios, provided that they conform to applicable water quality standards and that construction equipment does not enter or damage the buffer or critical area. Clearing and grading, and wells are also allowed within the setback.

4.2 Washington State Department of Ecology

Activities altering wetlands and streams may require permit authorization from WDOE per Section 401 of the federal Clean Water Act (CWA) as directed by the U.S. Environmental Protection Agency. WDOE has authority over discharge into all wetlands (including isolated wetlands) and streams and can impose buffers and compensatory mitigation for impacts (RCW 90.48). The WDOE appears to have jurisdiction over all site wetlands and streams. The WDOE reviews all permits received by the Corps for Water Quality Certification. WDOE requires an “individual” review of all wetland disturbances greater than one-half acre.

4.3 Washington State Department of Fish and Wildlife

The WDFW requires issuance of a Hydraulic Project Approval (HPA) prior to any activities that may directly or indirectly affect streams or associated wetlands. The WDFW does not appear to have jurisdiction over site wetlands, but does have jurisdiction over Spring Creek. However, WDFW may have jurisdiction over certain site wetlands (potentially Wetlands B and D) if any proposed impacts alter hydrology downstream.

4.4 U.S. Army Corps of Engineers

The Corps regulates the discharge of dredged or fill material into wetlands, streams, and other drainages that connect to Waters of the United States under Section 404 of the CWA. The Corps regulates structures and/or work in or affecting the course, condition, or capacity of navigable Waters of the United States under Section 10 of the Rivers and Harbors Act of 1899. The Corps requires notification for all disturbances to wetlands, streams, and potentially to other drainages (ditches). It is incumbent upon the landowner to disclose disturbances.

The Corps will automatically assert jurisdiction over some surface waters and will need to complete a “significant nexus” determination for others, depending on the degree of connection to other waters, the hydrologic classification of these associated waters, and their significance in the larger drainage basin. Wetland hydrologic classification and connectivity is described in this report as the “Corps hydrologic classification” (Table 3) using definitions provided in current Corps guidance documents.

The Corps hydrologic classification is based on whether a surface water meets the definition of or is connected to a waterbody that meets the definition of a Traditional Navigable Water (TNW) or a Relatively Permanent Water (RPW). A TNW is a navigable water protected under Section 10 of the Rivers and Harbors Act of 1899 or other waters currently or historically used or susceptible to use in interstate or foreign commerce. An RPW is a surface stream or river that exhibits continuous flow of more than three months out of the year.

Only the Corps has the authority to make jurisdictional determinations; however, the following is a description of the anticipated determinations. Spring Creek has continuous flow for more than three months out of the year; therefore, it qualifies as an RPW. Spring Creek connects to Bellingham Bay (a TNW). Wetland D flows into Spring Creek. Therefore, Wetland D appears to qualify as a wetland adjacent to an RPW and the Corps is expected to exert jurisdiction. Wetlands E, F, G, and H appear isolated and it appears the Corps does not have jurisdiction over these wetlands. Wetland B outflows into a culvert. The discharge point of this culvert is unknown; however we assume that the culvert eventually discharges into downstream surface waters (RPWs). Therefore, the Corps is anticipated to have jurisdiction over Wetland B. Wetland A appears to mostly contain water until it infiltrates or evaporates, but a seasonal or occasional surface connection could also be present between Wetlands A and B. Therefore, it is unknown at this time if the Corps would have regulatory jurisdiction over Wetland A. Additional field work during the wet season would be required to make a determination for Wetland A.

Activities in Waters of the United States that require Corps authorization may qualify for authorization under one of the general Nationwide Permits (NWPs) if the activities meet the criteria. In the more commonly used NWPs, discharge (fill) is limited to under 1/2 acre of wetland, 300 linear feet of stream, and 1/3 acre of tidal waters. Discharge exceeding the NWP thresholds requires an Individual Permit from the Corps. Mitigation is required for most activities. The Corps also has discretion to disallow disturbance to high quality wetlands. As

part of their permit review, the Corps must verify the project complies with Section 7 of the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, and Section 106 of the National Historic Preservation Act, (including archeological sites).

4.5 Mitigation Sequencing

Local, state, and federal agencies require projects impacting wetlands, streams, or wildlife HCAs follow mitigation sequencing. Mitigation sequencing is a process where applicants show they have avoided all impacts to regulated areas and their buffers to the furthest extent possible. In some cases, if alteration to the regulated area is deemed unavoidable, impacts may be allowed if all adverse impacts resulting from a development proposal are mitigated using best available science so as to result in no net loss of critical area functions and values. When alteration or impact to a regulated area is proposed, the applicant must demonstrate that all reasonable efforts have been taken to mitigate impacts in the following, prioritized, order: 1) Avoid, 2) Minimize, 3) Rectify, 4) Reduce, 5) Compensate.

When mitigation sequencing is followed, the COB may allow the applicant to reduce or average the standard wetland buffer width. According to the COB CAO, the buffer of a Category II and III wetland may not be reduced to less than 75% of the standard buffer, or 50 feet, whichever is greater. Alternatively, buffers may sometimes be averaged, on a case by case basis, when all criteria stated in the CAO 16.55.500(D)(4) are met, including the minimum buffer widths mentioned above.

APPENDIX A: REFERENCES

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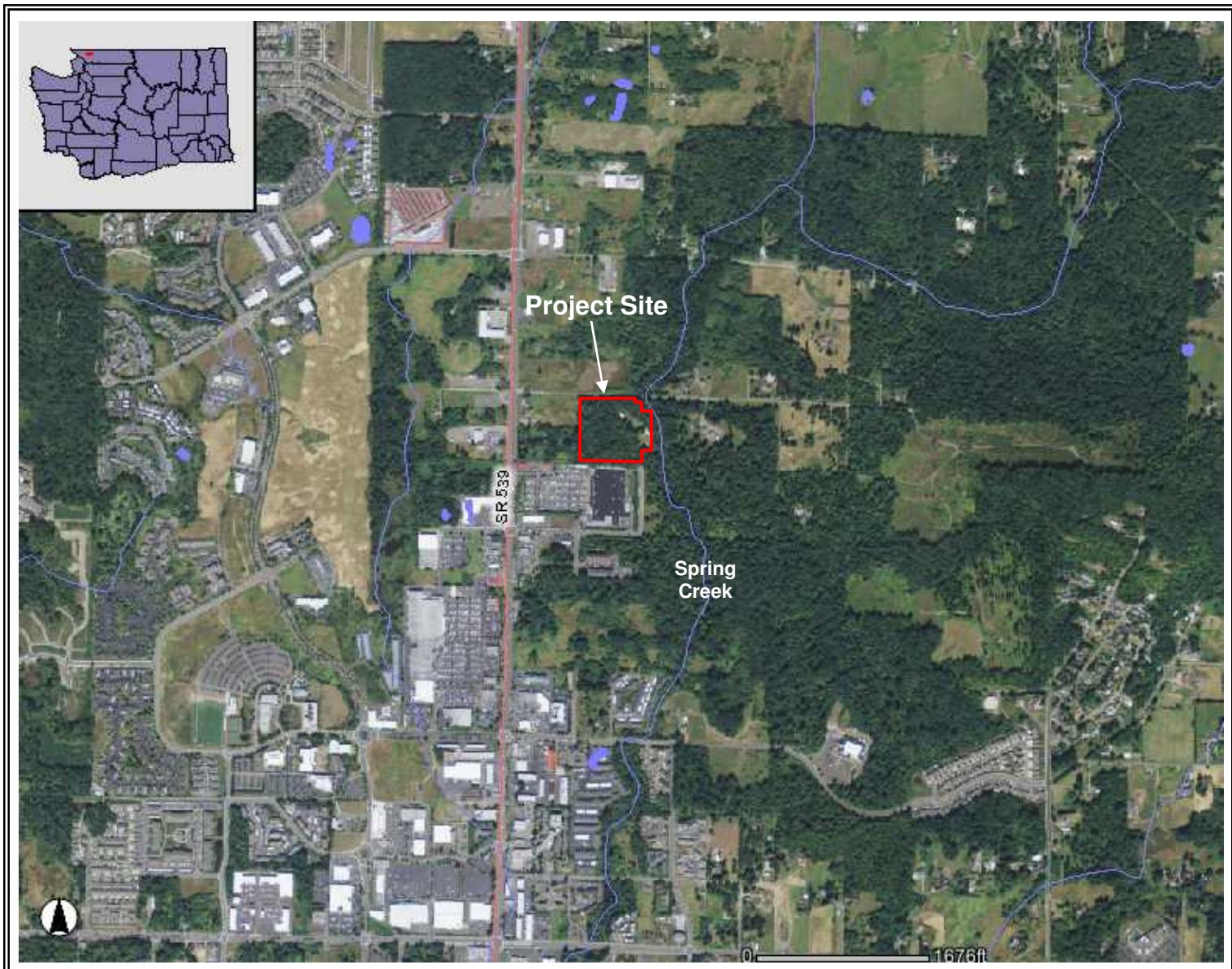
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APPENDIX B: FIGURES

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NORTHWEST ECOLOGICAL

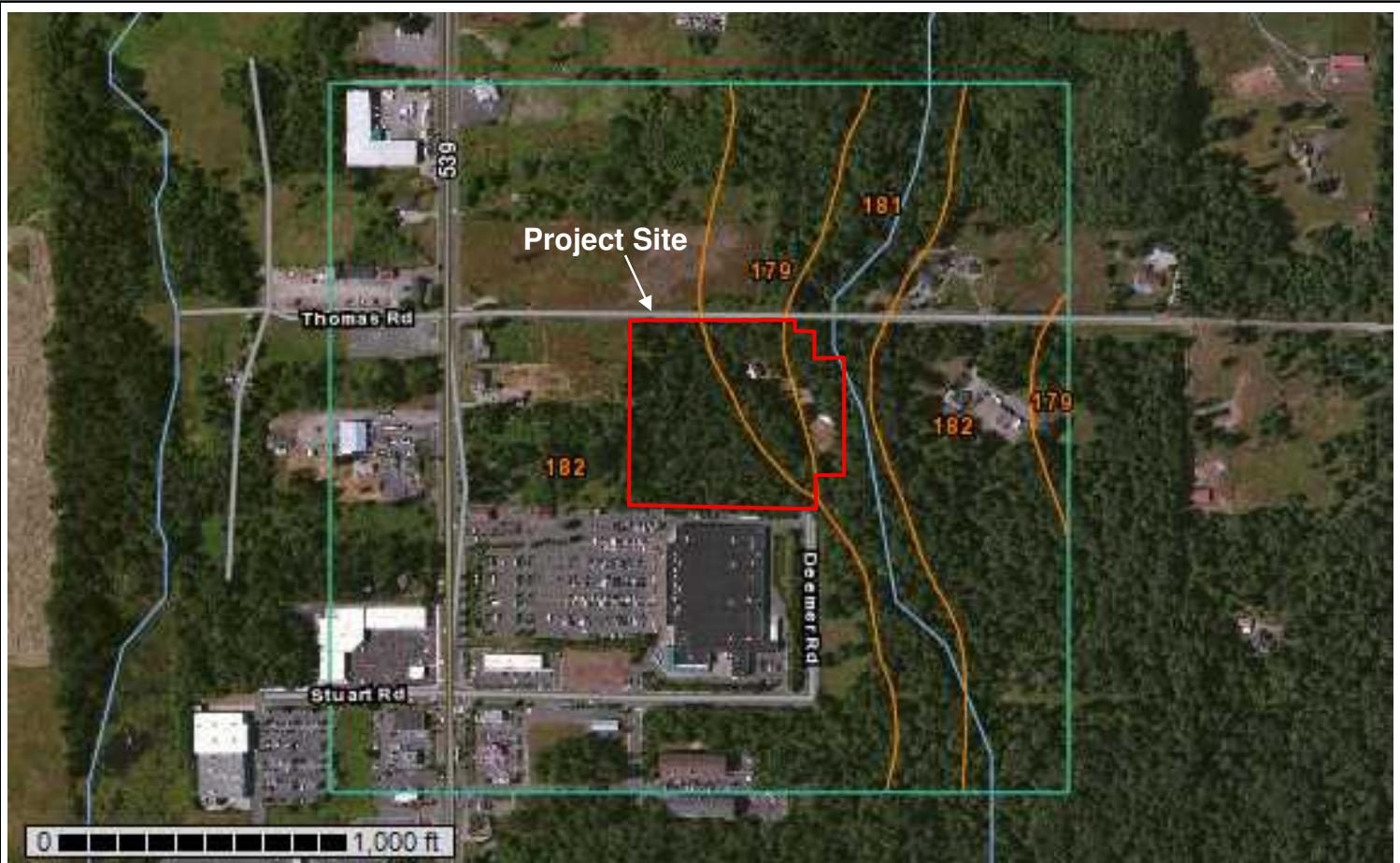


Aerial Photograph
(WDFW SalmonScape)

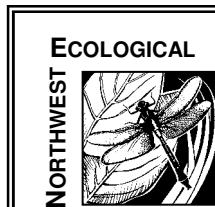
Van Wyck Road
Wetland Delineation Report

Figure 2

Sept. 2013



Soil Series: Whatcom Silt Loam, on 3% to 8% Slopes (#179)
Whatcom Silt Loam, on 30% to 60% Slopes (#181)
Whatcom Labounty Silt Loam, on 0% to 8% Slopes (#182)

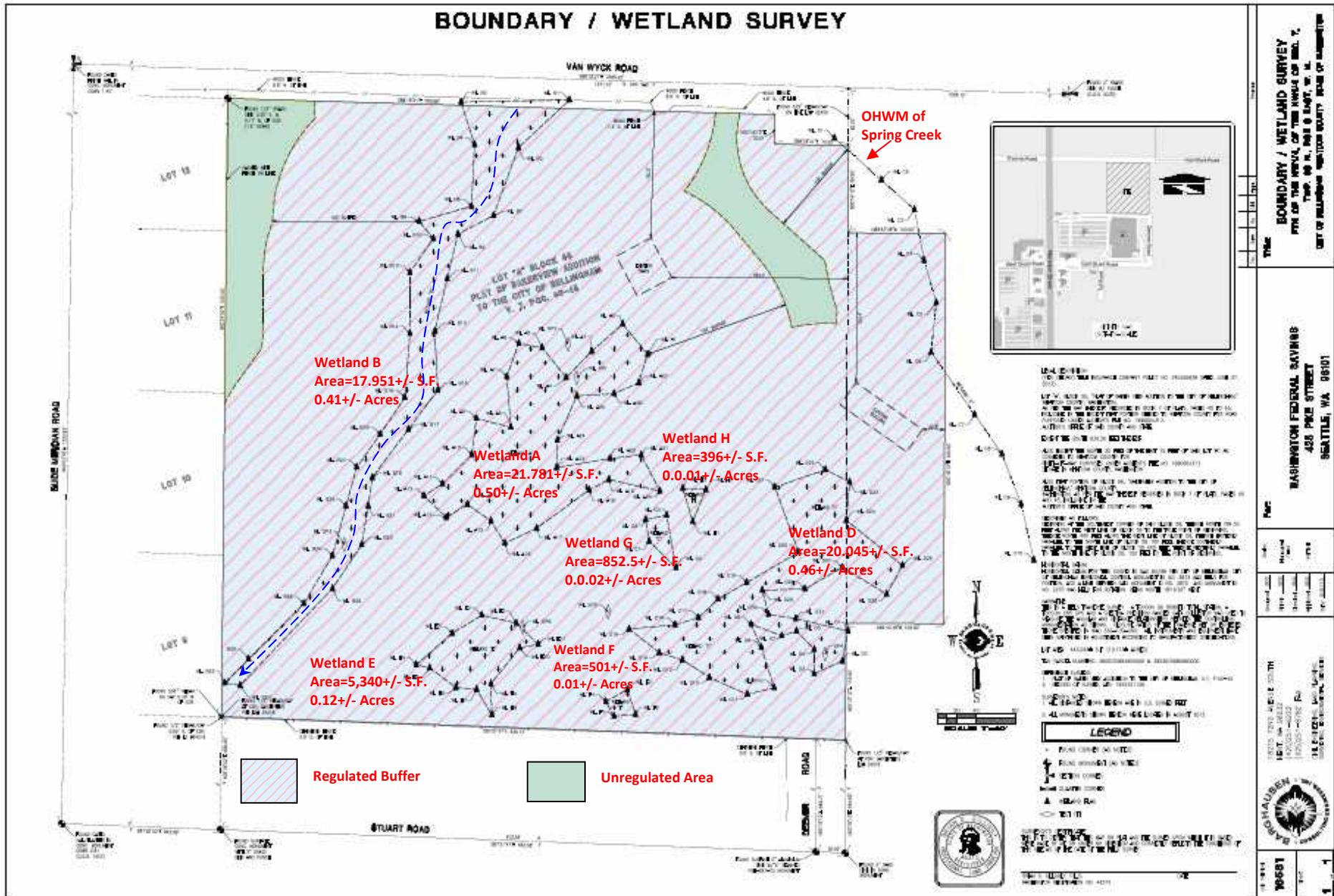


Soil Map
(USDA NRCS)

Van Wyck Road
Wetland Delineation Report

Figure 3
Sept. 2013

BOUNDARY / WETLAND SURVEY



NORTHWEST ECOLOGICAL

Wetland Map

Figure 4

APPENDIX C: PHOTOGRAPHS

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Overview of existing house and lawn southwest of the house



Overview of existing barn and lawn southwest of the barn



Detail of typical upland forest



Detail of Wetland A



Detail of Wetland A



Detail of Wetland A near Van Wyck Road



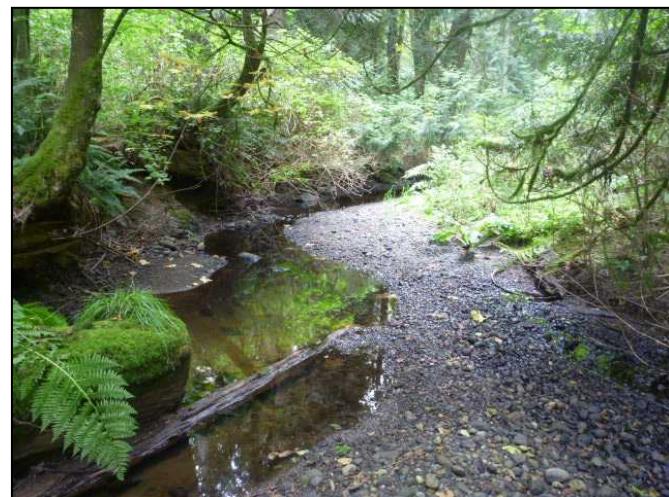
Detail of Wetland B



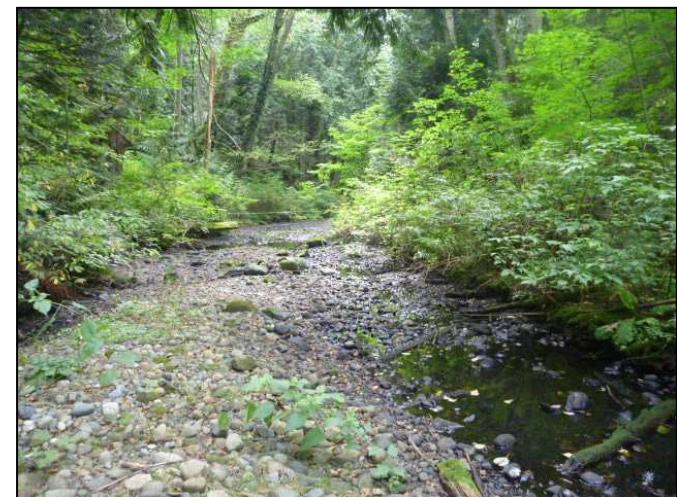
Detail of Wetland B



Detail of the culvert at the south end of Wetland B



Detail of Spring Creek



Detail of Spring Creek



Detail of PFO portion of Wetland D



Detail of PFO portion of Wetland D



Detail of PEM portion of Wetland D



Detail of Wetland E



Detail of Wetland F

APPENDIX D: DATA SHEETS

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WETLAND DETERMINATION DATA FORM – Western Mountain, Valley Coast Region

Project Site: Van Wyck Road	City/County: City of Bellingham	Sample Date: 08/14/13
Applicant/Owner: Potter	State: WA	Sample Point: 01
Investigator: Jackson, Porter	Section/Township/Range: 7/38/03	
Landform (hillslope, terrace, etc):	Local Relief (concave, convex, none):	Subregion: LRR A
Soil Map Unit Name: Whatcom- Labounty Silt Loam (182)		NWI Classification:
Are climatic/hydrologic conditions on the site typical of this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (if no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: WETLAND A. Positive indicators for all three parameters were observed at this location.			

VEGETATION

Tree Stratum (Plot size: 9 meters)	Absolute % Cover	Indicator Status	Dominant Species?	Dominance Test worksheet Number of Dominant Species that are OBL, FACW, or FAC:
<i>Thuja plicata</i>	100	FAC	<input type="checkbox"/>	3 (A)
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	100			Total number of dominant species across all strata: 3 (AB)
Sapling/Shrub Stratum (Plot size: 3 meters)				Percent of dominant species that are OBL, FACW, or FAC: 100 (A/AB)
<i>Thuja plicata</i>	10	FAC	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	10			
Herb Stratum (Plot size: 1 meter)				Prevalence Index worksheet OBL species: x 1= FACW species: x 2= FAC species: x 3= FACU species: x 4= UPL species: x 5= Total: (A) (B)
<i>Athyrium filix-femina</i>	15	FAC	<input checked="" type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	15			
Woody Vine Stratum (Plot size:)				Prevalence Index = B/A = Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
n/a		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:				
% Bare Ground in Herb Stratum: 85				
Remarks: The majority of dominant species observed at this location were hydrophytic.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sample Point: 01

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

Depth (inches)	Soil Color		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100			-	-	mucky silt loam	5-7
5-7	10YR 3/1	50			-	-	silt loam	mix of top and sub soils
	10YR 5/1	40	10YR 4/5	10	C	M		
7-20	10YR 5/1	80	10YR 4/6	20	C	M	silt loam	
					-	-		
					-	-		
					-	-		
					-	-		

¹Type: C=concentration D=depletion RM=reduced matrix ²Location: PL=pore lining RC=root channel M=matrix**Hydric Soil Indicators: (applicable to all LRRs unless otherwise noted)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Red parent material (TF2)
<input type="checkbox"/> Very shallow dark surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type:

Depth (inches):

Hydric Soil Present? Yes No

Remarks: Soil observed at this location met NRCS hydric soil indicators.

HYDROLOGY**Wetland hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-stained (B9) (MLRA 1,2,4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Water-stained Leaves (B9) (except MLRA 1, 2, 4A and 4B)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Dry-season Water Table (C2)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along living roots (C3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Front-heave Hummocks (D7)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-neutral (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:Surface Water Present? Yes No Depth (inches):Water Table Present? Yes No Depth (inches):Saturation Present? Yes No Depth (inches): (include capillary fringe)**Wetland Hydrology Present?**Yes No

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

Remarks: Positive indicators of wetland hydrology were observed at this location.

WETLAND DETERMINATION DATA FORM – Western Mountain, Valley Coast Region

Project Site: Van Wyck Road	City/County: City of Bellingham	Sample Date: 08/14/13
Applicant/Owner: Potter	State: WA	Sample Point: 02
Investigator: Jackson, Porter	Section/Township/Range: 7/38/03	
Landform (hillslope, terrace, etc):	Local Relief (concave, convex, none):	Subregion: LRR A
Soil Map Unit Name: Whatcom- Labounty Silt Loam (182)		NWI Classification:
Are climatic/hydrologic conditions on the site typical of this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (if no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Positive indicators for all three parameters were not observed at this location. Upland forest north of Wetland A.			

VEGETATION

Tree Stratum (Plot size: 9 meters)	Absolute % Cover	Indicator Status	Dominant Species?	Dominance Test worksheet Number of Dominant Species that are OBL, FACW, or FAC:
<i>Thuja plicata</i>	100	FAC	<input checked="" type="checkbox"/>	1 (A)
<i>Acer macrophyllum</i>	20	FACU	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	120			Total number of dominant species across all strata: 4 (AB)
Sapling/Shrub Stratum (Plot size: 3 meters)				Percent of dominant species that are OBL, FACW, or FAC: 25 (A/AB)
<i>Oemleria cerasiformis</i>	15	FACU	<input checked="" type="checkbox"/>	
<i>Rubus spectabilis</i>	Trace	FAC	<input type="checkbox"/>	
<i>Symporicarpos albus</i>	Trace	FACU	<input type="checkbox"/>	
		-	<input type="checkbox"/>	OBL species: x 1=
		-	<input type="checkbox"/>	FACW species: x 2=
Total Cover:	15			FAC species: x 3=
Herb Stratum (Plot size: 1 meter)				FACU species: x 4=
<i>Polystichum munitum</i>	40	FACU	<input checked="" type="checkbox"/>	UPL species: x 5=
<i>Rubus ursinus</i>	10	FACU	<input checked="" type="checkbox"/>	Total: (A) (B)
<i>Trifoliate borealis</i>	Trace	FACW	<input type="checkbox"/>	Prevalence Index = B/A =
		-	<input type="checkbox"/>	Hydrophytic Vegetation Indicators:
		-	<input type="checkbox"/>	<input type="checkbox"/> Dominance Test is > 50%
		-	<input type="checkbox"/>	<input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹
		-	<input type="checkbox"/>	<input type="checkbox"/> Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)
		-	<input type="checkbox"/>	<input type="checkbox"/> Wetland Non-Vascular Plants ¹
		-	<input type="checkbox"/>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹
Total Cover:	50			¹ Indicators of hydric soil and wetland hydrology must be present.
Woody Vine Stratum (Plot size:)				Hydrophytic Vegetation Present?
n/a		-	<input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:				
% Bare Ground in Herb Stratum: 50				
Remarks: The majority of dominant species observed at this location were not hydrophytic.				

SOIL

Sample Point: 02

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

Depth (inches)	Soil Color		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/3	100			-	-	Silt loam	
4-20	10YR 4/4	100			-	-	Silt loam	
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		

¹Type: C=concentration D=depletion RM=reduced matrix ²Location: PL=pore lining RC=root channel 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 Soils³:

- 2 cm Muck (A10)
- Red parent material (TF2)
- Very shallow dark surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type:

Depth (inches):

Hydric Soil Present? Yes No

Remarks: Soil observed at this location did not meet NRCS hydric soil indicators.

HYDROLOGY

Wetland hydrology Indicators: Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-stained Leaves (B9) (except MLRA 1, 2, 4A and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along living roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks) 	<ul style="list-style-type: none"> <input type="checkbox"/> Water-stained (B9) (MLRA 1,2,4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Front-heave Hummocks (D7) <input type="checkbox"/> FAC-neutral (D5)

Field Observations:Surface Water Present? Yes No Depth (inches):Water Table Present? Yes No Depth (inches):Saturation Present? Yes No Depth (inches): (include capillary fringe)**Wetland Hydrology Present?**Yes No

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

Remarks: Positive indicators of wetland hydrology were not observed at this location.

WETLAND DETERMINATION DATA FORM – Western Mountain, Valley Coast Region

Project Site: Van Wyck Road	City/County: City of Bellingham	Sample Date: 08/14/13
Applicant/Owner: Potter	State: WA	Sample Point: 03
Investigator: Jackson, Porter	Section/Township/Range: 7/38/03	
Landform (hillslope, terrace, etc):	Local Relief (concave, convex, none):	Subregion: LRR A
Soil Map Unit Name: Whatcom- Labounty Silt Loam (182)		NWI Classification:
Are climatic/hydrologic conditions on the site typical of this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (if no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: WETLAND B. Positive indicators for all three parameters were observed at this location.			

VEGETATION

Tree Stratum (Plot size: 9 meters)	Absolute % Cover	Indicator Status	Dominant Species?	Dominance Test worksheet Number of Dominant Species that are OBL, FACW, or FAC:
<i>Thuja plicata</i>	40	FAC	<input checked="" type="checkbox"/>	5 (A)
<i>Alnus rubra</i>	30	FAC	<input checked="" type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	70			Total number of dominant species across all strata: 5 (AB)
Sapling/Shrub Stratum (Plot size: 3 meters)				Percent of dominant species that are OBL, FACW, or FAC: 100 (A/AB)
<i>Rubus spectabilis</i>	30	FAC	<input checked="" type="checkbox"/>	100 (A/AB)
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	30			
				OBL species: x 1=
				FACW species: x 2=
				FAC species: x 3=
Herb Stratum (Plot size: 1 meter)				FACU species: x 4=
<i>Lysichiton americanum</i>	10	OBL	<input checked="" type="checkbox"/>	UPL species: x 5=
<i>Athyrium filix-femina</i>	10	FAC	<input checked="" type="checkbox"/>	
<i>Veronica americana</i>	Trace	OBL	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	20			Prevalence Index = B/A =
Woody Vine Stratum (Plot size:)				Hydrophytic Vegetation Indicators:
<i>n/a</i>		-	<input type="checkbox"/>	<input checked="" type="checkbox"/> Dominance Test is > 50%
		-	<input type="checkbox"/>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
		-	<input type="checkbox"/>	<input type="checkbox"/> Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)
		-	<input type="checkbox"/>	<input type="checkbox"/> Wetland Non-Vascular Plants ¹
		-	<input type="checkbox"/>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹
Total Cover: % Bare Ground in Herb Stratum: 80				¹ Indicators of hydric soil and wetland hydrology must be present.
Remarks: The majority of dominant species observed at this location were hydrophytic.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sample Point: 03

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

Depth (inches)	Soil Color		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	2.5Y 3/1	95	10YR 4/4	5	C	M	clay loam	Concentrations stronger in top six inches. Soil contains charcoal
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		

¹Type: C=concentration D=depletion RM=reduced matrix ²Location: PL=pore lining RC=root channel M=matrix

Hydric Soil Indicators: (applicable to all LRRs unless otherwise noted)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
Restrictive Layer (if present):		³ Indicators of hydrophytic vegetation and wetland hydrology must be present.
Type: Depth (inches):		Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Soil observed at this location met NRCS hydric soil indicators.		

HYDROLOGY

Wetland hydrology Indicators: Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-stained Leaves (B9) (except MLRA 1, 2, 4A and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along living roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-stained (B9) (MLRA 1,2,4A, and 4B) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Front-heave Hummocks (D7) <input type="checkbox"/> FAC-neutral (D5)
Field Observations:		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): (include capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Positive indicators of wetland hydrology were observed at this location.		

WETLAND DETERMINATION DATA FORM – Western Mountain, Valley Coast Region

Project Site: Van Wyck Road	City/County: City of Bellingham	Sample Date: 08/14/13
Applicant/Owner: Potter	State: WA	Sample Point: 04
Investigator: Jackson, Porter	Section/Township/Range: 7/38/03	
Landform (hillslope, terrace, etc):	Local Relief (concave, convex, none):	Subregion: LRR A
Soil Map Unit Name: Whatcom Silt Loam (179)		NWI Classification:
Are climatic/hydrologic conditions on the site typical of this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (if no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: WETLAND D. Positive indicators for all three parameters were observed at this location.			

VEGETATION

Tree Stratum (Plot size: 9 meters)	Absolute % Cover	Indicator Status	Dominant Species?	Dominance Test worksheet Number of Dominant Species that are OBL, FACW, or FAC:
n/a		-	<input type="checkbox"/>	2 (A)
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:				Total number of dominant species across all strata: 2 (AB)
Sapling/Shrub Stratum (Plot size: 3 meters)				Percent of dominant species that are OBL, FACW, or FAC: 100 (A/AB)
n/a		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:				Prevalence Index worksheet
Herb Stratum (Plot size: 1 meter)				OBL species: x 1= FACW species: x 2= FAC species: x 3= FACU species: x 4=
Ranunculus repens	80	FAC	<input checked="" type="checkbox"/>	
Glyceria sp.	40	FACW	<input checked="" type="checkbox"/>	
Athyrium filix-femina	5	FAC	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	125			Prevalence Index = B/A =
Woody Vine Stratum (Plot size:)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
n/a		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:				Hydrophytic Vegetation Present?
% Bare Ground in Herb Stratum: 0				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: The majority of dominant species observed at this location were hydrophytic.				

SOIL

Sample Point: 04

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

Depth (inches)	Soil Color		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR 3/1	100			-	-	clayey silt loam	
5-11	7.5YR 3/1	100			-	-	clayey silt loam	with a lot of cobble
11-20	10YR 4/2	80	10YR 4/4	20	C	M	silt loam	with charcoal
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		

¹Type: C=concentration D=depletion RM=reduced matrix²Location: PL=pore lining RC=root channel M=matrix**Hydric Soil Indicators: (applicable to all LRRs unless otherwise noted)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Red parent material (TF2)
<input type="checkbox"/> Very shallow dark surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type:

Depth (inches):

Hydric Soil Present? Yes No

Remarks: Soil observed at this location met NRCS hydric soil indicators.

HYDROLOGY

Wetland hydrology Indicators: Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-stained (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-stained Leaves (B9) (except MLRA 1, 2, 4A and 4B)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Dry-season Water Table (C2)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along living roots (C3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Front-heave Hummocks (D7)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-neutral (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations:		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): (include capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Positive indicators of wetland hydrology were observed at this location.		

WETLAND DETERMINATION DATA FORM – Western Mountain, Valley Coast Region

Project Site: Van Wyck Road	City/County: City of Bellingham	Sample Date: 08/14/13
Applicant/Owner: Potter	State: WA	Sample Point: 05
Investigator: Jackson, Porter	Section/Township/Range: 7/38/03	
Landform (hillslope, terrace, etc):	Local Relief (concave, convex, none):	Subregion: LRR A
Soil Map Unit Name: Whatcom- Labounty Silt Loam (182)		NWI Classification:
Are climatic/hydrologic conditions on the site typical of this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (if no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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 <input type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Positive indicators for all three parameters were not observed at this location. Upland forest between Wetlands D and E.			

VEGETATION

Tree Stratum (Plot size: 9 meters)	Absolute % Cover	Indicator Status	Dominant Species?	Dominance Test worksheet Number of Dominant Species that are OBL, FACW, or FAC:
<i>Thuja plicata</i>	40	FAC	<input checked="" type="checkbox"/>	5 (A)
<i>Alnus rubra</i>	40	FAC	<input checked="" type="checkbox"/>	
<i>Betula papyrifera</i>	30	FAC	<input checked="" type="checkbox"/>	
<i>Acer macrophyllum</i>	20	FACU	<input type="checkbox"/>	
Total Cover:	130			Total number of dominant species across all strata: 6 (AB)
Sapling/Shrub Stratum (Plot size: 3 meters)				Percent of dominant species that are OBL, FACW, FAC: 83 (A/AB)
<i>Symphoricarpos albus</i>	35	FACU	<input checked="" type="checkbox"/>	83 (A/AB)
<i>Acer circinatum</i>	20	FAC	<input checked="" type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	55			Prevalence Index worksheet
Herb Stratum (Plot size: 1 meter)				OBL species: x 1=
<i>Maianthemum dilatum</i>	40	FAC	<input checked="" type="checkbox"/>	Percent of dominant species that are OBL, FACW, FAC: 83 (A/AB)
<i>Rubus ursinus</i>	5	FACU	<input type="checkbox"/>	OBL species: x 1=
<i>Athyrium filix-femina</i>	5	FAC	<input type="checkbox"/>	FACW species: x 2=
		-	<input type="checkbox"/>	FAC species: x 3=
		-	<input type="checkbox"/>	FACU species: x 4=
		-	<input type="checkbox"/>	UPL species: x 5=
		-	<input type="checkbox"/>	Total: (A) (B)
		-	<input type="checkbox"/>	Prevalence Index = B/A =
Woody Vine Stratum (Plot size:)				Hydrophytic Vegetation Indicators:
<i>n/a</i>		-	<input type="checkbox"/>	<input checked="" type="checkbox"/> Dominance Test is > 50%
		-	<input type="checkbox"/>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
		-	<input type="checkbox"/>	<input type="checkbox"/> Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)
		-	<input type="checkbox"/>	<input type="checkbox"/> Wetland Non-Vascular Plants ¹
		-	<input type="checkbox"/>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹
Total Cover: % Bare Ground in Herb Stratum: 40				¹ Indicators of hydric soil and wetland hydrology must be present.
Remarks: The majority of dominant species observed at this location were hydrophytic.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sample Point: 05

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

Depth (inches)	Soil Color		Redox Features					Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	
0-20	10YR 3/3	100			-	-	silt loam	
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		

¹Type: C=concentration D=depletion RM=reduced matrix ²Location: PL=pore lining RC=root channel M=matrix**Hydric Soil Indicators: (applicable to all LRRs unless otherwise noted)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Red parent material (TF2)
<input type="checkbox"/> Very shallow dark surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type:

Depth (inches):

Hydric Soil Present? Yes No

Remarks: Soil observed at this location did not meet NRCS hydric soil indicators.

HYDROLOGY**Wetland hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-stained Leaves (B9) (except MLRA 1, 2, 4A and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along living roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)

Secondary Indicators (2 or more required)

<input type="checkbox"/> Water-stained (B9) (MLRA 1,2,4A, and 4B)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-season Water Table (C2)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Front-heave Hummocks (D7)
<input type="checkbox"/> FAC-neutral (D5)

Field Observations:Surface Water Present? Yes No Depth (inches):Water Table Present? Yes No Depth (inches):Saturation Present? Yes No Depth (inches): (include capillary fringe)**Wetland Hydrology Present?**Yes No

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

Remarks: Positive indicators of wetland hydrology were not observed at this location.

WETLAND DETERMINATION DATA FORM – Western Mountain, Valley Coast Region

Project Site: Van Wyck Road	City/County: City of Bellingham	Sample Date: 08/14/13
Applicant/Owner: Potter	State: WA	Sample Point: 06
Investigator: Jackson, Porter	Section/Township/Range: 7/38/03	
Landform (hillslope, terrace, etc):	Local Relief (concave, convex, none):	Subregion: LRR A
Soil Map Unit Name: Whatcom- Labounty Silt Loam (182)		NWI Classification:
Are climatic/hydrologic conditions on the site typical of this time of year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (if no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: WETLAND E. Positive indicators for all three parameters were observed at this location.			

VEGETATION

Tree Stratum (Plot size: 9 meters)	Absolute % Cover	Indicator Status	Dominant Species?	Dominance Test worksheet Number of Dominant Species that are OBL, FACW, or FAC:
n/a		-	<input type="checkbox"/>	4 (A)
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:				
Sapling/Shrub Stratum (Plot size: 3 meters)				Percent of dominant species that or OBL, FACW, FAC: 100 (A/AB)
Acer circinatum	20	FAC	<input checked="" type="checkbox"/>	
Rubus spectabilis	10	FAC	<input checked="" type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	30			
Herb Stratum (Plot size: 1 meter)				Prevalence Index worksheet OBL species: x 1= FACW species: x 2= FAC species: x 3= FACU species: x 4= UPL species: x 5= Total: (A) (B)
Ranunculus repens	40	FAC	<input checked="" type="checkbox"/>	
Oenanthe sarmentosa	50	OBL	<input checked="" type="checkbox"/>	
Athyrium filix-femina	5	FAC	<input type="checkbox"/>	
Lysichiton americanum	5	OBL	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:	100			
Woody Vine Stratum (Plot size:)				Prevalence Index = B/A = Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
n/a		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
		-	<input type="checkbox"/>	
Total Cover:				
% Bare Ground in Herb Stratum: 0				
Remarks: The majority of dominant species observed at this location were hydrophytic.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sample Point: 06

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

Depth (inches)	Soil Color		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	2.5Y 2.5/1	100			-	-	mucky silt loam	
10-20	10YR 5/1	80	10YR 4/6	20	C	M	silt loam	
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		
					-	-		

¹Type: C=concentration D=depletion RM=reduced matrix ²Location: PL=pore lining RC=root channel M=matrix

Hydric Soil Indicators: (applicable to all LRRs unless otherwise noted)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red parent material (TF2) <input type="checkbox"/> Very shallow dark surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
Restrictive Layer (if present):		Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: Depth (inches):		
Remarks: Soil observed at this location met NRCS hydric soil indicators.		

HYDROLOGY

Wetland hydrology Indicators: Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-stained Leaves (B9) (except MLRA 1, 2, 4A and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along living roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-stained (B9) (MLRA 1,2,4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Front-heave Hummocks (D7) <input checked="" type="checkbox"/> FAC-neutral (D5)
Field Observations:		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): (include capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Positive indicators of wetland hydrology were observed at this location.		

APPENDIX E: WDOE RATING FORMS

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WETLAND RATING FORM – WESTERN WASHINGTON

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

Project: Van Wyck

Date of site visit: 8/14/13

Name of wetland (if known): Wetland A

Rated by: V. Jackson

Trained by Ecology? Yes No

Date of Training:

SEC: 7 TWNSHP: 38N RNGE: 3E Is S/T/R in Appendix D? Yes No **Map of wetland unit: figure n/a Estimated size: 0.50 acres****SUMMARY OF RATING****Category based on FUNCTIONS provide by wetland**I II III IV

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

Score for Water Quality Functions	10
Score for Hydrologic Functions	24
Score for Habitat Functions	28
TOTAL score for Functions	62

Category based on SPECIAL CHARACTERISTICS of wetlandI II Does not apply **Final Category (choose the “highest” category from above)****II****Summary of basic information about the wetland unit**

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	<input type="checkbox"/>	Depressional <input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine <input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe <input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope <input type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats <input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal <input type="checkbox"/>
Interdunal	<input type="checkbox"/>	
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present <input type="checkbox"/>

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

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

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

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

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

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO = go to question 2 **YES** = the wetland class is **Tidal Fringe**

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

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

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

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

NO = go to question 3 **YES** = the wetland class is **Flats**

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

3. Does the entire wetland unit meet **both** of the following criteria?

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8ha) in size;
- At least 30% of the open water area is deeper than 6.6ft (2m)?

NO = go to question 4 **YES** = the wetland class is **Lake-fringe (Lacustrine Fringe)**

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

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

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

NO = go to question 5 **YES** = the wetland class is **Slope**

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

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

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

NO = go to question 6 YES = the wetland class is Riverine

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

NO = go to question 7 YES = the wetland class is Depressional

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

NO = go to question 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 of 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.

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

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

D Depressional and Flats Wetlands WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve the water quality		Points (Only 1 score per box)
D1. Does the wetland unit have the potential to improve water quality?		(see p. 38)
D1.1 Characteristics of surface water flows out of the wetland:		Figure n/a
<input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)	3 pts	
<input type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	
<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	1 pt	3
<input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	1 pt	
<i>(If ditch is not permanently flowing, treat unit as "intermittently flowing") Provide photo or drawing</i>		
S1.2 The soil two inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	<input type="checkbox"/> YES 4 pts <input checked="" type="checkbox"/> NO 0 pts	0
D1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):		Figure n/a
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in >95% of the area	5 pts	
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{2}$ of the area	3 pts	
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{10}$ of the area	1 pt	3
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in < $\frac{1}{10}$ of the area	0 pts	
Map of Cowardin vegetation classes		
D1.4 Characteristics of seasonal ponding or inundation.		Figure n/a
<i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i>		
<input checked="" type="checkbox"/> Area seasonally ponded is $> \frac{1}{2}$ total area of the wetland	4 pts	4
<input type="checkbox"/> Area seasonally ponded is $> \frac{1}{4}$ total area of the wetland	2 pts	
<input type="checkbox"/> Area seasonally ponded is < $\frac{1}{4}$ total area of the wetland	0 pts	
Map of Hydroperiods		
Total for D1	<i>Add the points in the boxes above</i>	10
D2 Does the wetland unit have the opportunity to improve water quality?		(see p. 44)
<i>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce quality in streams, lakes, or groundwater down gradient 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.</i>		
<input type="checkbox"/> Grazing in the wetland or within 150 feet		Multiplier =1
<input type="checkbox"/> Untreated stormwater discharges to the wetland		
<input type="checkbox"/> Tilled fields or orchards within 150 feet of the wetland		
<input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging		
<input type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland		
<input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen		
<input type="checkbox"/> Other		
YES = multiplier is 2 NO = multiplier is 1		
Total- Water Quality Functions	Multiply the score from D1 by D2 <i>Add the score to the table on page 1</i>	10

D Depressional and Flats Wetlands		Points (Only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
D3 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		(see p. 46)
D3.1 Characteristics of surface water flows out of the wetland unit:		4
<input checked="" type="checkbox"/> Unit is a depression with no surface water leaving (no outlet)	4 pts	
<input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	
<input type="checkbox"/> Unit is flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i>	1 pt	
<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	0 pts	
D3.2 Depth of Storage during wet periods <i>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).</i>		3
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	7 pts	
<input type="checkbox"/> The wetland is a headwater wetland	5 pts	
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from the surface or bottom of outlet	5 pts	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from the surface or bottom of outlet	3 pts	
<input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7) but has small depressions on the surface that trap water	1 pt	
<input type="checkbox"/> Marks of ponding less than 0.5 ft	0 pts	
D3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of: the area of upstream basin contributing surface water to the wetland, to the area of the wetland unit itself.</i>		5
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit	5 pts	
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	3 pts	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit	0 pt	
<input type="checkbox"/> Entire unit is in the FLATS class	5 pts	
Total for D3	<i>Add the points in the boxes above</i>	12
D4 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?		(see p. 49)
Answer YES if the wetland is in a location in the watershed where it provides flood storage, or reduction in water velocity; it 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 floodgate, tide gate, flap valve, reservoir, etc.; OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur.		
<i>Note which of the following indicators of opportunity apply.</i>		
<input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems		
<input type="checkbox"/> Wetland drains to a river or stream that has flooding problems		
<input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems		
<input checked="" type="checkbox"/> Other: <i>wetland has not outlet and impounds surface runoff water that might otherwise flow into salmonid habitat</i> YES = multiplier is 2	NO = multiplier is 1	
Total- Hydrologic Functions	Multiply the score from D3 by D4 <i>Add score to table on page 1</i>	24

These question apply to wetlands of all HGM classes		Points (Only 1 score per box)											
HABITAT FUNCTIONS -Indicators that unit functions to provide important habitat													
H1. Does the wetland unit have the potential to provide habitat for many species?		Figure n/a											
H1.1 Vegetation structure (see p. 72) <i>Check the types of vegetation classes present (as defined in Cowardin) - Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</i> <p> <input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub- areas where shrubs have >30% cover <input checked="" type="checkbox"/> Forested- areas where trees have >30% cover </p> <p><i>If the unit has a forested class, check if:</i></p> <p> <input checked="" type="checkbox"/> Forested areas have three out of five strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon </p> <p><i>Add the number of vegetation types that qualify. If you have:</i></p> <table> <tbody> <tr> <td>Map of Cowardin vegetation classes</td> <td>4 or more structures</td> <td>4 pts</td> </tr> <tr> <td></td> <td>3 structures</td> <td>2 pts</td> </tr> <tr> <td></td> <td>2 structures</td> <td>1 pt</td> </tr> <tr> <td></td> <td>1 structure</td> <td>0 pts</td> </tr> </tbody> </table>			Map of Cowardin vegetation classes	4 or more structures	4 pts		3 structures	2 pts		2 structures	1 pt		1 structure
Map of Cowardin vegetation classes	4 or more structures	4 pts											
	3 structures	2 pts											
	2 structures	1 pt											
	1 structure	0 pts											
H1.2 Hydroperiods (see p. 73) <i>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (see text for descriptions of hydroperiods).</i> <p> <input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland </p> <p>Map of hydroperiods</p> <p> <input type="checkbox"/> Lake-fringe wetland <input checked="" type="checkbox"/> Freshwater tidal wetland </p>		Figure n/a											
H1.3 Richness of Plant Species (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 square feet. (Different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian Milfoil, reed canary grass, purple loosestrife, or Canadian thistle</i> Number of Species Counted: <p> <input type="checkbox"/> >19 species <input checked="" type="checkbox"/> 5-19 species <input type="checkbox"/> <5 species </p> <p>List of species counted (not required):</p>		1											

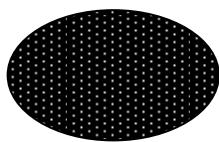
Total for page 3

H1.4. Interspersion of Habitats (see p. 76)

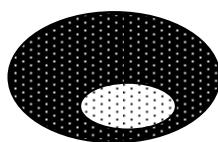
Decide from the diagrams below, whether interspersion between Cowardin vegetation classes (described in H1.1), or the classes and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.

Figure n/a

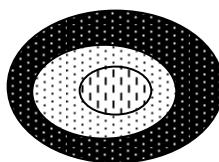
2



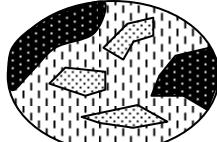
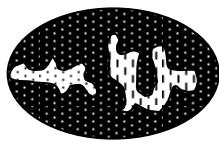
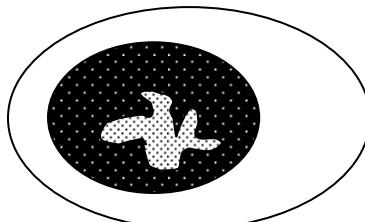
None = 0 points



Low = 1 point



Moderate = 2 points



(Riparian braided channels)

High = 3 points

NOTE: If you have four or more classes or three vegetation classes and open water, the rating is always "high."

Use map of Cowardin vegetation classes**H1.5 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 points column.

3

- Large, downed, woody debris within the wetland (>4 inches diameter and 6ft long)
- Standing snags in the wetland (diameter at bottom >4 inches)
- Undercut banks are present for at least 6.6ft (2m) and/or overhanging vegetation which extends at least 3.3ft (1m) over a stream for at least 33 ft (10m)
- Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present
- At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in area that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- Invasive plants cover less than 25% of the wetland area in each stratum of plants

Note: the 20% stated in early printings of the manual on page 78 is an error.

H1. Total Score – potential for providing habitat

Add the scores in all H1 columns above

8

Comments:

H2. Does the wetland unit have the <u>opportunity</u> to provide habitat for many species?		
H2.1 Buffers (see p. 80)		Figure n/a
<p>Choose the description that best represents the condition of the 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."</p> <p><input checked="" type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. No structures are within undisturbed part of buffer. (Relatively undisturbed also means no-grazing, no landscaping, no daily human use.) 5 pts</p> <p><input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. 4 pts</p> <p><input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. 4 pts</p> <p><input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference. 3 pts</p> <p><input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. 3 pts</p>		5
<p>If the buffer does not meet any of the above criteria</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80ft) of wetland >95% circumference. Light to moderate grazing, or lawns are OK. 2 pts</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. 2 pts</p> <p><input type="checkbox"/> Heavy grazing in the buffer. 1 pt</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland). 0 pts</p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above. 1 pt</p>	Aerial photo showing buffers	
H2.2 Corridors and Connections (see p. 81)		4
<p>H2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150ft wide, has at least 30% cover of shrubs, forest, or native undisturbed prairie, that connects to estuaries, other wetlands, or undisturbed uplands that are at least 250 acres in size? <i>Dams in riparian corridors, heavily used gravel roads, and paved roads are considered breaks in the corridor.</i></p> <p>YES = 4 points (go to question H 2.3) NO = go to question H2.2.2</p> <p>H2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands, or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above.</p> <p>YES = 2 points (go to question H2.3) NO = go to question H2.2.3.</p> <p>H2.2.3 Is the wetland:</p> <p><input type="checkbox"/> within five miles (8km) of a brackish or salt water estuary OR</p> <p><input type="checkbox"/> within three miles of a large field or pasture (>40 acres) OR</p> <p><input type="checkbox"/> within one mile of a lake greater than 20 acres?</p>		
<p>YES = 1 point NO = 0 points</p>		Total for page 9

H2.3 Near or adjacent to other priority habitats listed by WDFW (*see new and complete descriptions of WDFW priority habitat, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>*)

1

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife. (Full description in WDFW PHS report p. 152).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/ Mature Forests:** Old growth west of Cascade crest- Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) which are >81 cm (32 in) dbh or > 200 yrs of age. Mature Forests- Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100% ; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth; 80-200 yr old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full description 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 wet prairie (full description 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore (full description of habitats and the definition of relatively undisturbed are in WDFW PHS report p. 167-169, and glossary in Appendix A).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 7.6 m (25ft) high and occurring below 5000ft.
- Talus:** Homogeneous areas of rock rubble ranging in average size from 0.15 to 2.0 m (0.5 to 6.5ft), composed as basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/ use by wildlife. Priority snags have a DBH of >51 cm (20 in) in Western Washington and are >2M (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 the wetland has 3 or more priority habitats	4 pts
2 priority habitats	3 pts
1 priority habitat	1 pt
no priority habitats	0 pts

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4)

H2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p.84)		5
<input checked="" type="checkbox"/> There are at least three other wetlands within $\frac{1}{2}$ 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, field, or other development). 5 pts		
<input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are three other lake-fringe wetlands within $\frac{1}{2}$ mile. 5 pts		
<input type="checkbox"/> There are at least three other wetlands within $\frac{1}{2}$ mile, BUT the connection between them is disturbed. 3 pts		
<input type="checkbox"/> The wetland is Lake-fringe on a lake WITH disturbance and there are three other lake-fringe wetlands within $\frac{1}{2}$ mile. 3 pts		
<input type="checkbox"/> There is at least one other wetland within $\frac{1}{2}$ mile. 2 pts		
<input type="checkbox"/> There are no other wetlands within $\frac{1}{2}$ mile. 0 pts		
H2. Total Score - opportunity to provide habitat		20
<i>Add the scores in all of the H2 columns above</i>		
Total for H1		8
Total Score for Habitat Functions		28
<i>Add the points from the total H1 and H2 boxes</i>		
<i>Add the score to table on page 1</i>		

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	CATEGORY
SC 1.0 Estuarine Wetlands (see p. 86) Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity of greater than 0.5 ppt. YES = go to question 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 question SC 1.2	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and less than 10% cover of non-native plant species). If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II, while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> 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

<p>SC. 2.0 Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage Wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p>Verified through: <input type="checkbox"/> S/T/R information in Appendix D, or <input type="checkbox"/> Accessed from WNHP/DNR website</p> <p>YES = Contact WNHP/DNR (see p. 79) and go to question SC 2.2 NO = _____</p> <p>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?</p> <p>YES = Category I NO = _____ not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (see p. 87)</p> <p>Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If the answer yes you will still need rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> 1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats, or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a filed 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 rating purposes 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, is present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of total shrub and herbaceous cover consists of species in Table 3)? YES = is a bog for purposes of rating NO = go to question 4 <p>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.</p> <ol style="list-style-type: none"> 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 total shrub/herbaceous cover)? YES = Category I NO = is not a bog for the purposes of rating 	Cat. I

SC 4.0 Forested Wetland (see p. 90)

Does the wetland unit have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife's forest as priority habitats? *If the answer is YES the wetland still needs to be rated based on its functions.*

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

NOTE: The criterion for dbh is based on measurement for upland forests. Two-hundred year old trees in wetland 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 to 200 years old OR have average dbh exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth.

Cat. I

YES = Category I NO = not a forested wetland with special characteristics

SC 5.0 Wetlands in Coastal Lagoons (see p. 91)

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.

The lagoon in which the wetland is located contains surface water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*).

YES = go to question 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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

The wetland is larger than 1/10 acre (4350 square feet).

Cat. I

Cat. II

YES = Category I NO = Category II

SC 6.0 Interdunal Wetlands (see p. 93)

Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership of WBUO)?

YES = go to question SC6.1 NO = ___ not an interdunal wetland for rating

If the answer is YES the wetland still need to be rated based on its functions.

In practical terms that mean the following geographic areas:

- The 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 a mosaic of wetlands that is one acre or larger?

YES = Category II NO = go to question SC 6.2

Cat. II

SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that are between 0.1 and 1 acre?

YES = Category III

Cat. III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p.

1. If NO was answered for all types enter "Not Applicable" on p. 1.

WETLAND RATING FORM – WESTERN WASHINGTON

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

Project: Van Wyck

Date of site visit: 8/14/13

Name of wetland (if known): Wetland B

Rated by: V. Jackson

Trained by Ecology? Yes No

Date of Training:

SEC: 7 TWNSHP: 38N RNGE: 3E Is S/T/R in Appendix D? Yes No **Map of wetland unit: Figure n/a Estimated size: 0.41****SUMMARY OF RATING****Category based on FUNCTIONS provide by wetland**I II III IV

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

Score for Water Quality Functions	24
Score for Hydrologic Functions	18
Score for Habitat Functions	21
TOTAL score for Functions	63

Category based on SPECIAL CHARACTERISTICS of wetlandI II Does not apply **Final Category (choose the “highest” category from above)****II****Summary of basic information about the wetland unit**

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	<input type="checkbox"/>	Depressional <input type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine <input checked="" type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe <input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope <input type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats <input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal <input type="checkbox"/>
Interdunal	<input type="checkbox"/>	
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present <input type="checkbox"/>

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

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

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

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

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

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO = go to question 2 **YES** = the wetland class is **Tidal Fringe**

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

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

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

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

NO = go to question 3 **YES** = the wetland class is **Flats**

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

3. Does the entire wetland unit meet **both** of the following criteria?

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8ha) in size;
- At least 30% of the open water area is deeper than 6.6ft (2m)?

NO = go to question 4 **YES** = the wetland class is **Lake-fringe (Lacustrine Fringe)**

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

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

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

NO = go to question 5 **YES** = the wetland class is **Slope**

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

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

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

NO = go to question 6 **YES = the wetland class is Riverine**

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

NO = go to question 7 **YES = the wetland class is Depressional**

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

NO = go to question 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 of 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.

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

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

R Riverine and Freshwater Tidal Fringe Wetlands WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve the water quality		Points (Only 1 score per box)
R1 Does the wetland unit have the potential to improve water quality?		(see p. 52)
R1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:		Figure n/a
<input type="checkbox"/> Depressions cover > $\frac{3}{4}$ area of wetland	8 pts	4
<input checked="" type="checkbox"/> Depressions cover > $\frac{1}{2}$ area of wetland	4 pts	
If depression > $\frac{1}{2}$ of area of unit draw polygons on aerial photo or map		
<input type="checkbox"/> Depressions present but cover < $\frac{1}{2}$ area of wetland	2 pts	
<input type="checkbox"/> No depressions present	0 pts	
R1.2 Characteristic of the vegetation in the unit (areas with >90% cover at person height):		Figure n/a
<input checked="" type="checkbox"/> Forest or shrub > $\frac{2}{3}$ the area of the unit	8 pts	8
<input type="checkbox"/> Forest or shrub > $\frac{1}{3}$ area of the unit	6 pts	
<input type="checkbox"/> Ungrazed, emergent plants > $\frac{2}{3}$ area of unit	6 pts	
<input type="checkbox"/> Ungrazed, emergent plants > $\frac{1}{3}$ area of unit	3 pts	
<input type="checkbox"/> Forest, shrub, and ungrazed emergents < $\frac{1}{3}$ area of unit	0 pts	
Aerial photo or map showing polygons of different vegetation types		
Total for R1	<i>Add the points in the boxes above</i>	12
R2 Does the wetland unit have the opportunity to improve water quality?		
Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes, or groundwater down-gradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>		
Which of the following conditions provide the sources of pollutants?		
<input type="checkbox"/> Grazing in the wetland or within 150 feet		
<input type="checkbox"/> Untreated stormwater discharges to the wetland		
<input type="checkbox"/> Tilled fields or orchards within 150 feet of the wetland		
<input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	Multiplier =2	
<input type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland		
<input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds, or nutrients in the river water above standards for water quality.		
<input type="checkbox"/> Other		
YES = multiplier is 2	NO = multiplier is 1	
Total- Water Quality Functions	<i>Multiply the score from R1 by R2</i> <i>Add the score to the table on page 1</i>	24

Comments:

R Riverine and Freshwater Tidal Fringe Wetlands		Points (Only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
R3 Does the wetland unit have the potential to reduce flooding and erosion?		(see p. 54)
R3.1 Characteristics of the overbank storage that the wetland provides: <i>Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream channel (distance between banks).</i> Calculate the ratio: width of wetland / width of stream		Figure n/a 2
<input type="checkbox"/> If the ratio is more than 20	9 pts	
<input type="checkbox"/> The ratio is between 10 and 20	6 pts	
<input type="checkbox"/> The ratio is from 5 to < 10	4 pts	
<input checked="" type="checkbox"/> The ratio is from 1 to < 5	2 pts	
<input type="checkbox"/> The ratio is less than 1	1 pt	
Aerial photo or map showing average widths		
R3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub." Choose the point appropriate for the best description (polygons need to have >90% cover at person height NOT Cowardin classes):		Figure n/a
<input checked="" type="checkbox"/> Forest or shrubs for > $\frac{1}{3}$ area OR herbaceous plants > $\frac{2}{3}$ area	7 pts	
<input type="checkbox"/> Forest or shrubs for > 1/10 area OR herbaceous plants > $\frac{1}{3}$ area	4 pts	
<input type="checkbox"/> Vegetation does not meet above criteria	0 pts	
Aerial photo or map showing polygons of different vegetation types		
Total for R3	<i>Add the points in the boxes above</i>	9
R4. Does the wetland unit have the opportunity to reduce flooding and erosion?		(see p. 57)
Answer YES if the unit is in a location in the watershed where it provides flood storage, or reduction in water velocity, it helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows.		
Note which of the following conditions apply:		
<input checked="" type="checkbox"/> There are human structures and activities downstream (roads, bridges, buildings, or farms) that can be damaged by flooding	8 pts	
<input type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding.		
<input type="checkbox"/> Other		
<i>Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike.</i>		
YES = multiplier is 2 NO = multiplier is 1		
Total- Hydrologic Functions	Multiply the score from R3 by R4 <i>Add score to table on page 1</i>	18

Comments:

These question apply to wetlands of all HGM classes		Points (Only 1 score per box)												
HABITAT FUNCTIONS -Indicators that unit functions to provide important habitat														
H1. Does the wetland unit have the potential to provide habitat for many species?		Figure n/a												
H1.1 Vegetation structure (see p. 72)														
<p>Check the types of vegetation classes present (as defined in Cowardin) - Size threshold for each class is $\frac{1}{4}$ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p><input type="checkbox"/> Aquatic bed</p> <p><input type="checkbox"/> Emergent plants</p> <p><input checked="" type="checkbox"/> Scrub/shrub- areas where shrubs have >30% cover</p> <p><input checked="" type="checkbox"/> Forested- areas where trees have >30% cover</p>		1												
<p>If the unit has a forested class, check if:</p> <p><input type="checkbox"/> Forested areas have three out of five strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon</p>														
<p>Add the number of vegetation types that qualify. If you have:</p> <table> <tbody> <tr> <td>Map of Cowardin vegetation classes</td> <td>4 or more structures</td> <td>4 pts</td> </tr> <tr> <td></td> <td>3 structures</td> <td>2 pts</td> </tr> <tr> <td></td> <td>2 structures</td> <td>1 pt</td> </tr> <tr> <td></td> <td>1 structure</td> <td>0 pts</td> </tr> </tbody> </table>		Map of Cowardin vegetation classes	4 or more structures	4 pts		3 structures	2 pts		2 structures	1 pt		1 structure	0 pts	
Map of Cowardin vegetation classes	4 or more structures	4 pts												
	3 structures	2 pts												
	2 structures	1 pt												
	1 structure	0 pts												
H1.2 Hydroperiods (see p. 73)		Figure n/a												
<p>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or $\frac{1}{4}$ acre to count (see text for descriptions of hydroperiods).</p> <p><input type="checkbox"/> Permanently flooded or inundated</p> <p><input type="checkbox"/> Seasonally flooded or inundated</p> <p><input checked="" type="checkbox"/> Occasionally flooded or inundated</p> <p><input checked="" type="checkbox"/> Saturated only</p> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</p> <p><input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p>		2												
<p>Map of hydroperiods</p> <p><input type="checkbox"/> Lake-fringe wetland</p> <p><input type="checkbox"/> Freshwater tidal wetland</p>		2 pts 2 pts												
H1.3 Richness of Plant Species (see p. 75)		1												
<p>Count the number of plant species in the wetland that cover at least 10 square feet. (Different patches of the same species can be combined to meet the size threshold)</p> <p>You do not have to name the species.</p> <p>Do not include Eurasian Milfoil, reed canary grass, purple loosestrife, or Canadian thistle</p>														
<p>Number of Species Counted:</p> <p><input type="checkbox"/> >19 species</p> <p><input checked="" type="checkbox"/> 5-19 species</p> <p><input type="checkbox"/> <5 species</p>		2 pts 1 pt 0 pts												
<p>List of species counted (not required):</p>														

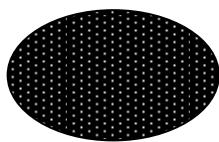
Total for page

H1.4. Interspersion of Habitats (see p. 76)

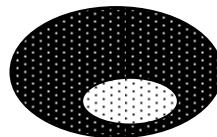
Decide from the diagrams below, whether interspersion between Cowardin vegetation classes (described in H1.1), or the classes and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.

Figure n/a

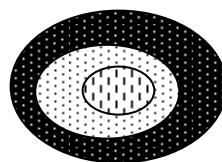
2



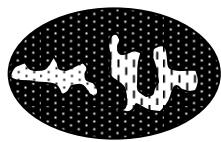
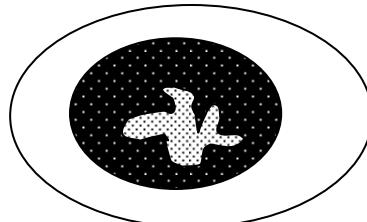
None = 0 points



Low = 1 point



Moderate = 2 points



(Riparian braided channels)

High = 3 points

NOTE: If you have four or more classes or three vegetation classes and open water, the rating is always "high."

Use map of Cowardin vegetation classes**H1.5 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 points column.

1

- Large, downed, woody debris within the wetland (>4 inches diameter and 6ft long)
- Standing snags in the wetland (diameter at bottom >4 inches)
- Undercut banks are present for at least 6.6ft (2m) and/or overhanging vegetation which extends at least 3.3ft (1m) over a stream for at least 33 ft (10m)
- Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present
- At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in area that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- Invasive plants cover less than 25% of the wetland area in each stratum of plants

Note: the 20% stated in early printings of the manual on page 78 is an error.

H1. Total Score – potential for providing habitat

Add the scores in all H1 columns above

7

Comments:

H2. Does the wetland unit have the <u>opportunity</u> to provide habitat for many species?		
H2.1 Buffers (see p. 80)		Figure n/a
<p>Choose the description that best represents the condition of the 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."</p> <p><input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. No structures are within undisturbed part of buffer. (Relatively undisturbed also means no-grazing, no landscaping, no daily human use.) 5 pts</p> <p><input checked="" type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. 4 pts</p> <p><input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. 4 pts</p> <p><input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference. 3 pts</p> <p><input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. 3 pts</p>		4
<p>If the buffer does not meet any of the above criteria</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80ft) of wetland >95% circumference. Light to moderate grazing, or lawns are OK. 2 pts</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. 2 pts</p> <p><input type="checkbox"/> Heavy grazing in the buffer. 1 pt</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland). 0 pts</p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above. 1 pt</p>	Aerial photo showing buffers	
H2.2 Corridors and Connections (see p. 81)		4
<p>H2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150ft wide, has at least 30% cover of shrubs, forest, or native undisturbed prairie, that connects to estuaries, other wetlands, or undisturbed uplands that are at least 250 acres in size? <i>Dams in riparian corridors, heavily used gravel roads, and paved roads are considered breaks in the corridor.</i></p> <p>YES = 4 points (go to question H 2.3) NO = go to question H2.2.2</p> <p>H2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands, or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above.</p> <p>YES = 2 points (go to question H2.3) NO = go to question H2.2.3.</p> <p>H2.2.3 Is the wetland:</p> <p><input type="checkbox"/> within five miles (8km) of a brackish or salt water estuary OR</p> <p><input type="checkbox"/> within three miles of a large field or pasture (>40 acres) OR</p> <p><input type="checkbox"/> within one mile of a lake greater than 20 acres?</p>		
YES = 1 point NO = 0 points		Total for page

H2.3 Near or adjacent to other priority habitats listed by WDFW (*see new and complete descriptions of WDFW priority habitat, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>*)

1

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife. (Full description in WDFW PHS report p. 152).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/ Mature Forests:** Old growth west of Cascade crest- Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) which are >81 cm (32 in) dbh or > 200 yrs of age. Mature Forests- Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100% ; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth; 80-200 yr old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full description 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 wet prairie (full description 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore (full description of habitats and the definition of relatively undisturbed are in WDFW PHS report p. 167-169, and glossary in Appendix A).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 7.6 m (25ft) high and occurring below 5000ft.
- Talus:** Homogeneous areas of rock rubble ranging in average size from 0.15 to 2.0 m (0.5 to 6.5ft), composed as basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/ use by wildlife. Priority snags have a DBH of >51 cm (20 in) in Western Washington and are >2M (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 the wetland has 3 or more priority habitats	4 pts
2 priority habitats	3 pts
1 priority habitat	1 pt
no priority habitats	0 pts

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4)

H2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p.84)	
<input checked="" type="checkbox"/> There are at least three other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, field, or other development).	5 pts
<input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are three other lake-fringe wetlands within ½ mile.	5 pts
<input type="checkbox"/> There are at least three other wetlands within ½ mile, BUT the connection between them is disturbed.	3 pts
<input type="checkbox"/> The wetland is Lake-fringe on a lake WITH disturbance and there are three other lake-fringe wetlands within ½ mile.	3 pts
<input type="checkbox"/> There is at least one other wetland within ½ mile.	2 pts
<input type="checkbox"/> There are no other wetlands within ½ mile.	0 pts
H2. Total Score - opportunity to provide habitat	14
<i>Add the scores in all of the H2 columns above</i>	
Total for H1	7
Total Score for Habitat Functions	21
<i>Add the points from the total H1 and H2 boxes</i>	
<i>Add the score to table on page 1</i>	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	CATEGORY
SC 1.0 Estuarine Wetlands (see p. 86) Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity of greater than 0.5 ppt. YES = go to question 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 question SC 1.2	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and less than 10% cover of non-native plant species). If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II, while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> 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

<p>SC. 2.0 Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage Wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p>Verified through: <input type="checkbox"/> S/T/R information in Appendix D, or <input type="checkbox"/> Accessed from WNHP/DNR website</p> <p>YES = Contact WNHP/DNR (see p. 79) and go to question SC 2.2 NO = _____</p> <p>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?</p> <p>YES = Category I NO = _____ not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (see p. 87)</p> <p>Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If the answer yes you will still need rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> 1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats, or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a filed 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 rating purposes 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, is present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of total shrub and herbaceous cover consists of species in Table 3)? YES = is a bog for purposes of rating NO = go to question 4 	
<p>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.</p> <ol style="list-style-type: none"> 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 total shrub/herbaceous cover)? YES = Category I NO = is not a bog for the purposes of rating 	Cat. I

SC 4.0 Forested Wetland (see p. 90)

Does the wetland unit have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife's forest as priority habitats? *If the answer is YES the wetland still needs to be rated based on its functions.*

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

NOTE: The criterion for dbh is based on measurement for upland forests. Two-hundred year old trees in wetland 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 to 200 years old OR have average dbh exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth.

Cat. I

YES = Category I NO = not a forested wetland with special characteristics

SC 5.0 Wetlands in Coastal Lagoons (see p. 91)

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.

The lagoon in which the wetland is located contains surface water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*).

YES = go to question 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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

The wetland is larger than 1/10 acre (4350 square feet).

Cat. I

Cat. II

YES = Category I NO = Category II

SC 6.0 Interdunal Wetlands (see p. 93)

Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership of WBUO)?

YES = go to question SC6.1 NO = ___ not an interdunal wetland for rating

If the answer is YES the wetland still need to be rated based on its functions.

In practical terms that mean the following geographic areas:

- The 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 a mosaic of wetlands that is one acre or larger?

YES = Category II NO = go to question SC 6.2

Cat. II

SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that are between 0.1 and 1 acre?

YES = Category III

Cat. III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p.

1. If NO was answered for all types enter "Not Applicable" on p. 1.

WETLAND RATING FORM – WESTERN WASHINGTON

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

Project: Van Wyck

Date of site visit: 8/14/13

Name of wetland (if known): Wetland D

Rated by: V. Jackson

Trained by Ecology? Yes No

Date of Training:

SEC: 7 TWNSHP: 38N RNGE: 3E Is S/T/R in Appendix D? Yes No **Map of wetland unit: Figure n/a Estimated size: 0.46 acres****SUMMARY OF RATING****Category based on FUNCTIONS provide by wetland**I II III IV

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

Score for Water Quality Functions	18
Score for Hydrologic Functions	20
Score for Habitat Functions	21
TOTAL score for Functions	59

Category based on SPECIAL CHARACTERISTICS of wetlandI II Does not apply **Final Category (choose the “highest” category from above)****II****Summary of basic information about the wetland unit**

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	<input type="checkbox"/>	Depressional <input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine <input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe <input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope <input type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats <input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal <input type="checkbox"/>
Interdunal	<input type="checkbox"/>	
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present <input type="checkbox"/>

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

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

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

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

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

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO = go to question 2 **YES** = the wetland class is **Tidal Fringe**

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

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

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

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

NO = go to question 3 **YES** = the wetland class is **Flats**

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

3. Does the entire wetland unit meet **both** of the following criteria?

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8ha) in size;
- At least 30% of the open water area is deeper than 6.6ft (2m)?

NO = go to question 4 **YES** = the wetland class is **Lake-fringe (Lacustrine Fringe)**

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

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

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

NO = go to question 5 **YES** = the wetland class is **Slope**

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

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

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

NO = go to question 6 YES = the wetland class is Riverine

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

NO = go to question 7 YES = the wetland class is Depressional

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

NO = go to question 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 of 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.

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

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

D Depressional and Flats Wetlands		Points (Only 1 score per box)									
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve the water quality											
D1. Does the wetland unit have the potential to improve water quality?		(see p. 38)									
D1.1 Characteristics of surface water flows out of the wetland: <table border="0"> <tr> <td><input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)</td> <td>3 pts</td> <td rowspan="4" style="vertical-align: middle; text-align: center;">Figure n/a 2</td> </tr> <tr> <td><input checked="" type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet</td> <td>2 pts</td> </tr> <tr> <td><input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)</td> <td>1 pt</td> </tr> <tr> <td><input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i> Provide photo or drawing</td> <td>1 pt</td> </tr> </table>		<input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)	3 pts	Figure n/a 2	<input checked="" type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	1 pt	<input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i> Provide photo or drawing	1 pt	
<input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)	3 pts	Figure n/a 2									
<input checked="" type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet	2 pts										
<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	1 pt										
<input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i> Provide photo or drawing	1 pt										
S1.2 The soil two inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)		0									
<input type="checkbox"/> YES 4 pts <input checked="" type="checkbox"/> NO 0 pts											
D1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):		Figure n/a 3									
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in >95% of the area 5 pts											
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{2}$ of the area 3 pts											
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{10}$ of the area 1 pt											
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in < $\frac{1}{10}$ of the area 0 pts											
Map of Cowardin vegetation classes											
D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i>		Figure n/a 4									
<input checked="" type="checkbox"/> Area seasonally ponded is $> \frac{1}{2}$ total area of the wetland 4 pts											
<input type="checkbox"/> Area seasonally ponded is $> \frac{1}{4}$ total area of the wetland 2 pts											
<input type="checkbox"/> Area seasonally ponded is < $\frac{1}{4}$ total area of the wetland 0 pts											
Map of Hydroperiods											
Total for D1		<i>Add the points in the boxes above</i>									
		9									
D2 Does the wetland unit 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 quality in streams, lakes, or groundwater down gradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants, A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i>											
<input type="checkbox"/> Grazing in the wetland or within 150 feet <input type="checkbox"/> Untreated stormwater discharges to the wetland <input type="checkbox"/> Tilled fields or orchards within 150 feet of the wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other		Multiplier =2									
YES = multiplier is 2 NO = multiplier is 1											
Total- Water Quality Functions		<i>Multiply the score from D1 by D2 Add the score to the table on page 1</i>									
		18									

D Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		Points (Only 1 score per box)
D3 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		(see p. 46)
D3.1 Characteristics of surface water flows out of the wetland unit:		
<input checked="" type="checkbox"/> Unit is a depression with no surface water leaving (no outlet)	4 pts	2
<input checked="" type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	
<input type="checkbox"/> Unit is flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	1 pt	
<i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i>		
<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	0 pts	
D3.2 Depth of Storage during wet periods		3
<i>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).</i>		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	7 pts	
<input type="checkbox"/> The wetland is a headwater wetland	5 pts	
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from the surface or bottom of outlet	5 pts	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from the surface or bottom of outlet	3 pts	
<input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7) but has small depressions on the surface that trap water	1 pt	
<input type="checkbox"/> Marks of ponding less than 0.5 ft	0 pts	
D3.3 Contribution of wetland unit to storage in the watershed		5
<i>Estimate the ratio of: the area of upstream basin contributing surface water to the wetland, to the area of the wetland unit itself.</i>		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit	5 pts	
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	3 pts	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit	0 pt	
<input type="checkbox"/> Entire unit is in the FLATS class	5 pts	
Total for D3	<i>Add the points in the boxes above</i>	10
D4 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?		(see p. 49)
Answer YES if the wetland is in a location in the watershed where it provides flood storage, or reduction in water velocity; it 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 floodgate, tide gate, flap valve, reservoir, etc.; OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur.		
<i>Note which of the following indicators of opportunity apply.</i>		
<input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems		
<input type="checkbox"/> Wetland drains to a river or stream that has flooding problems		
<input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems		
<input checked="" type="checkbox"/> Other: <i>wetland has not outlet and impounds surface runoff water that might otherwise flow into salmonid habitat</i>	YES = multiplier is 2	NO = multiplier is 1
Total- Hydrologic Functions	<i>Multiply the score from D3 by D4 Add score to table on page 1</i>	
		20

These question apply to wetlands of all HGM classes		Points (Only 1 score per box)
HABITAT FUNCTIONS -Indicators that unit functions to provide important habitat		
H1. Does the wetland unit have the potential to provide habitat for many species?		
H1.1 Vegetation structure (see p. 72)		Figure n/a
<i>Check the types of vegetation classes present (as defined in Cowardin) - Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</i>		1
<input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub- areas where shrubs have >30% cover <input checked="" type="checkbox"/> Forested- areas where trees have >30% cover		
<i>If the unit has a forested class, check if:</i>		
<input type="checkbox"/> Forested areas have three out of five strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon		
<i>Add the number of vegetation types that qualify. If you have:</i>		
	4 or more structures	4 pts
Map of Cowardin vegetation classes	3 structures	2 pts
	2 structures	1 pt
	1 structure	0 pts
H1.2 Hydroperiods (see p. 73)		Figure n/a
<i>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (see text for descriptions of hydroperiods).</i>		1
<input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		
	4 or more present	3 pts
	3 present	2 pts
	2 present	1 pt
	1 present	0 pts
	Map of hydroperiods	
<input type="checkbox"/> Lake-fringe wetland <input checked="" type="checkbox"/> Freshwater tidal wetland		2 pts
		2 pts
H1.3 Richness of Plant Species (see p. 75)		
<i>Count the number of plant species in the wetland that cover at least 10 square feet. (Different patches of the same species can be combined to meet the size threshold)</i>		1
<i>You do not have to name the species.</i>		
<i>Do not include Eurasian Milfoil, reed canary grass, purple loosestrife, or Canadian thistle</i>		
Number of Species Counted:		
<input type="checkbox"/> >19 species <input checked="" type="checkbox"/> 5-19 species <input type="checkbox"/> <5 species		2 pts
		1 pt
		0 pts
List of species counted (not required):		

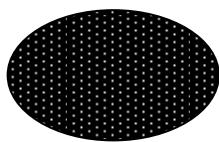
Total for page

H1.4. Interspersion of Habitats (see p. 76)

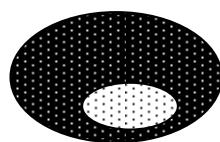
Decide from the diagrams below, whether interspersion between Cowardin vegetation classes (described in H1.1), or the classes and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.

Figure n/a

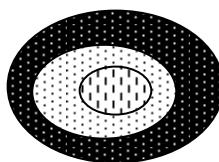
2



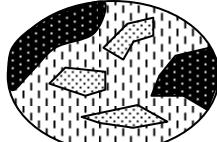
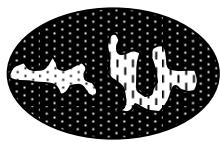
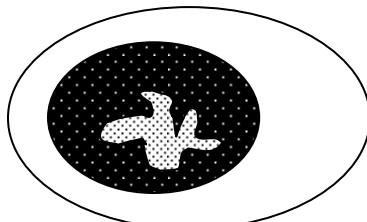
None = 0 points



Low = 1 point



Moderate = 2 points



(Riparian braided channels)

High = 3 points

NOTE: If you have four or more classes or three vegetation classes and open water, the rating is always "high."

Use map of Cowardin vegetation classes**H1.5 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 points column.

2

- Large, downed, woody debris within the wetland (>4 inches diameter and 6ft long)
- Standing snags in the wetland (diameter at bottom >4 inches)
- Undercut banks are present for at least 6.6ft (2m) and/or overhanging vegetation which extends at least 3.3ft (1m) over a stream for at least 33 ft (10m)
- Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present
- At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in area that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- Invasive plants cover less than 25% of the wetland area in each stratum of plants

Note: the 20% stated in early printings of the manual on page 78 is an error.

H1. Total Score – potential for providing habitat

Add the scores in all H1 columns above

7

Comments:

H2. Does the wetland unit have the <u>opportunity</u> to provide habitat for many species?		
H2.1 Buffers (see p. 80)		Figure n/a
	Choose the description that best represents the condition of the 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."	4
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. No structures are within undisturbed part of buffer. (Relatively undisturbed also means no-grazing, no landscaping, no daily human use.)	5 pts	
<input checked="" type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	4 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference.	4 pts	
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference.	3 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	3 pts	
If the buffer does not meet any of the above criteria		
<input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80ft) of wetland >95% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> Heavy grazing in the buffer.	1 pt	
<input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).	0 pts	
<input type="checkbox"/> Buffer does not meet any of the criteria above.	1 pt	
Aerial photo showing buffers		
H2.2 Corridors and Connections (see p. 81)		4
H2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150ft wide, has at least 30% cover of shrubs, forest, or native undisturbed prairie, that connects to estuaries, other wetlands, or undisturbed uplands that are at least 250 acres in size? <i>Dams in riparian corridors, heavily used gravel roads, and paved roads are considered breaks in the corridor.</i>		
YES = 4 points (go to question H 2.3) NO = go to question H2.2.2		
H2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands, or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above.		
YES = 2 points (go to question H2.3) NO = go to question H2.2.3.		
H2.2.3 Is the wetland:		
<input type="checkbox"/> within five miles (8km) of a brackish or salt water estuary OR		
<input type="checkbox"/> within three miles of a large field or pasture (>40 acres) OR		
<input type="checkbox"/> within one mile of a lake greater than 20 acres?		
YES = 1 point NO = 0 points		
Total for page		

H2.3 Near or adjacent to other priority habitats listed by WDFW (*see new and complete descriptions of WDFW priority habitat, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>*)

1

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife. (Full description in WDFW PHS report p. 152).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/ Mature Forests:** Old growth west of Cascade crest- Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) which are >81 cm (32 in) dbh or > 200 yrs of age. Mature Forests- Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100% ; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth; 80-200 yr old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full description 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 wet prairie (full description 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore (full description of habitats and the definition of relatively undisturbed are in WDFW PHS report p. 167-169, and glossary in Appendix A).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 7.6 m (25ft) high and occurring below 5000ft.
- Talus:** Homogeneous areas of rock rubble ranging in average size from 0.15 to 2.0 m (0.5 to 6.5ft), composed as basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/ use by wildlife. Priority snags have a DBH of >51 cm (20 in) in Western Washington and are >2M (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 the wetland has 3 or more priority habitats	4 pts
2 priority habitats	3 pts
1 priority habitat	1 pt
no priority habitats	0 pts

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4)

H2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p.84)		
<input checked="" type="checkbox"/> There are at least three other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, field, or other development).	5 pts	5
<input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are three other lake-fringe wetlands within ½ mile.	5 pts	
<input type="checkbox"/> There are at least three other wetlands within ½ mile, BUT the connection between them is disturbed.	3 pts	
<input type="checkbox"/> The wetland is Lake-fringe on a lake WITH disturbance and there are three other lake-fringe wetlands within ½ mile.	3 pts	
<input type="checkbox"/> There is at least one other wetland within ½ mile.	2 pts	
<input type="checkbox"/> There are no other wetlands within ½ mile.	0 pts	
H2. Total Score - opportunity to provide habitat		14
	<i>Add the scores in all of the H2 columns above</i>	
Total for H1		7
Total Score for Habitat Functions	<i>Add the points from the total H1 and H2 boxes</i>	21
	<i>Add the score to table on page 1</i>	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	CATEGORY
SC 1.0 Estuarine Wetlands (see p. 86) Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity of greater than 0.5 ppt. YES = go to question 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 question SC 1.2	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and less than 10% cover of non-native plant species). If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II, while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> 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

<p>SC. 2.0 Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage Wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p>Verified through: <input type="checkbox"/> S/T/R information in Appendix D, or <input type="checkbox"/> Accessed from WNHP/DNR website</p> <p>YES = Contact WNHP/DNR (see p. 79) and go to question SC 2.2 NO = _____</p> <p>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?</p> <p>YES = Category I NO = _____ not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (see p. 87)</p> <p>Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If the answer yes you will still need rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> 1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats, or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a filed 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 rating purposes 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, is present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of total shrub and herbaceous cover consists of species in Table 3)? YES = is a bog for purposes of rating NO = go to question 4 	
<p>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.</p> <ol style="list-style-type: none"> 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 total shrub/herbaceous cover)? YES = Category I NO = is not a bog for the purposes of rating 	Cat. I

SC 4.0 Forested Wetland (see p. 90)

Does the wetland unit have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife's forest as priority habitats? *If the answer is YES the wetland still needs to be rated based on its functions.*

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

NOTE: The criterion for dbh is based on measurement for upland forests. Two-hundred year old trees in wetland 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 to 200 years old OR have average dbh exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth.

Cat. I

YES = Category I NO = not a forested wetland with special characteristics

SC 5.0 Wetlands in Coastal Lagoons (see p. 91)

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.

The lagoon in which the wetland is located contains surface water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*).

YES = go to question 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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

The wetland is larger than 1/10 acre (4350 square feet).

Cat. I

Cat. II

YES = Category I NO = Category II

SC 6.0 Interdunal Wetlands (see p. 93)

Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership of WBUO)?

YES = go to question SC6.1 NO = ___ not an interdunal wetland for rating

If the answer is YES the wetland still need to be rated based on its functions.

In practical terms that mean the following geographic areas:

- The 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 a mosaic of wetlands that is one acre or larger?

YES = Category II NO = go to question SC 6.2

Cat. II

SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that are between 0.1 and 1 acre?

YES = Category III

Cat. III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p.

1. If NO was answered for all types enter "Not Applicable" on p. 1.

WETLAND RATING FORM – WESTERN WASHINGTON

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

Project: Van Wyck

Date of site visit: 8/14/13

Name of wetland (if known): Wetland E

Rated by: V. Jackson

Trained by Ecology? Yes No

Date of Training:

SEC: 7 TWNSHP: 38N RNGE: 3E Is S/T/R in Appendix D? Yes No **Map of wetland unit: Figure n/a Estimated size: 0.12 acres****SUMMARY OF RATING****Category based on FUNCTIONS provide by wetland**I II III IV

Category I = Score \geq 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	16
Score for Habitat Functions	19
TOTAL score for Functions	55

Category based on SPECIAL CHARACTERISTICS of wetlandI II Does not apply **Final Category (choose the “highest” category from above)**

II

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	<input type="checkbox"/>	Depressional <input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine <input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe <input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope <input type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats <input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal <input type="checkbox"/>
Interdunal	<input type="checkbox"/>	
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present <input type="checkbox"/>

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

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

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

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

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

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO = go to question 2 **YES** = the wetland class is **Tidal Fringe**

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

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

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

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

NO = go to question 3 **YES** = the wetland class is **Flats**

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

3. Does the entire wetland unit meet **both** of the following criteria?

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8ha) in size;
- At least 30% of the open water area is deeper than 6.6ft (2m)?

NO = go to question 4 **YES** = the wetland class is **Lake-fringe (Lacustrine Fringe)**

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

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

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

NO = go to question 5 **YES** = the wetland class is **Slope**

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

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

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

NO = go to question 6 YES = the wetland class is Riverine

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

NO = go to question 7 YES = the wetland class is Depressional

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

NO = go to question 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 of 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.

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

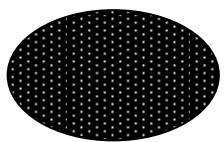
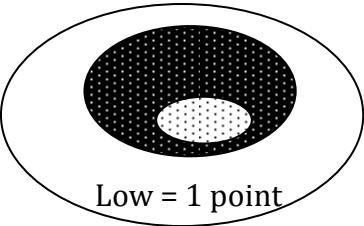
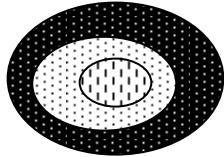
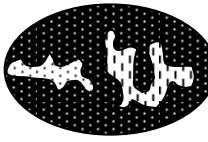
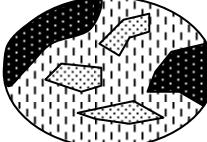
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

D Depressional and Flats Wetlands		Points (Only 1 score per box)									
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve the water quality											
D1. Does the wetland unit have the potential to improve water quality?		(see p. 38)									
D1.1 Characteristics of surface water flows out of the wetland: <table border="0"> <tr> <td><input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)</td> <td>3 pts</td> <td rowspan="4" style="vertical-align: middle; text-align: center;">Figure n/a</td> </tr> <tr> <td><input type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet</td> <td>2 pts</td> </tr> <tr> <td><input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)</td> <td>1 pt</td> </tr> <tr> <td><input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i> Provide photo or drawing</td> <td>1 pt</td> </tr> </table>		<input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)	3 pts	Figure n/a	<input type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	1 pt	<input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i> Provide photo or drawing	1 pt	
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S1.2 The soil two inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) <table border="0"> <tr> <td><input type="checkbox"/> YES</td> <td>4 pts</td> <td rowspan="2" style="vertical-align: middle; text-align: center;">0</td> </tr> <tr> <td><input checked="" type="checkbox"/> NO</td> <td>0 pts</td> </tr> </table>		<input type="checkbox"/> YES	4 pts	0	<input checked="" type="checkbox"/> NO	0 pts					
<input type="checkbox"/> YES	4 pts	0									
<input checked="" type="checkbox"/> NO	0 pts										
D1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <table border="0"> <tr> <td><input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in >95% of the area</td> <td>5 pts</td> <td rowspan="4" style="vertical-align: middle; text-align: center;">Figure n/a</td> </tr> <tr> <td><input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{2}$ of the area</td> <td>3 pts</td> </tr> <tr> <td><input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{10}$ of the area</td> <td>1 pt</td> </tr> <tr> <td><input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in < $\frac{1}{10}$ of the area</td> <td>0 pts</td> </tr> </table>		<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in >95% of the area	5 pts	Figure n/a	<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{2}$ of the area	3 pts	<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{10}$ of the area	1 pt	<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in < $\frac{1}{10}$ of the area	0 pts	
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<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{10}$ of the area	1 pt										
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in < $\frac{1}{10}$ of the area	0 pts										
Map of Cowardin vegetation classes											
D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i> <table border="0"> <tr> <td><input checked="" type="checkbox"/> Area seasonally ponded is $> \frac{1}{2}$ total area of the wetland</td> <td>4 pts</td> <td rowspan="3" style="vertical-align: middle; text-align: center;">Figure n/a</td> </tr> <tr> <td><input type="checkbox"/> Area seasonally ponded is $> \frac{1}{4}$ total area of the wetland</td> <td>2 pts</td> </tr> <tr> <td><input type="checkbox"/> Area seasonally ponded is < $\frac{1}{4}$ total area of the wetland</td> <td>0 pts</td> </tr> </table>		<input checked="" type="checkbox"/> Area seasonally ponded is $> \frac{1}{2}$ total area of the wetland	4 pts	Figure n/a	<input type="checkbox"/> Area seasonally ponded is $> \frac{1}{4}$ total area of the wetland	2 pts	<input type="checkbox"/> Area seasonally ponded is < $\frac{1}{4}$ total area of the wetland	0 pts	4		
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<input type="checkbox"/> Area seasonally ponded is $> \frac{1}{4}$ total area of the wetland	2 pts										
<input type="checkbox"/> Area seasonally ponded is < $\frac{1}{4}$ total area of the wetland	0 pts										
Map of Hydroperiods											
Total for D1	<i>Add the points in the boxes above</i>	10									
D2 Does the wetland unit 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 quality in streams, lakes, or groundwater down gradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants, A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <table border="0"> <tr> <td><input type="checkbox"/> Grazing in the wetland or within 150 feet</td> <td rowspan="8" style="vertical-align: middle; text-align: center;">Multiplier =2</td> </tr> <tr> <td><input type="checkbox"/> Untreated stormwater discharges to the wetland</td> </tr> <tr> <td><input type="checkbox"/> Tilled fields or orchards within 150 feet of the wetland</td> </tr> <tr> <td><input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</td> </tr> <tr> <td><input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland</td> </tr> <tr> <td><input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen</td> </tr> <tr> <td><input type="checkbox"/> Other</td> </tr> </table>		<input type="checkbox"/> Grazing in the wetland or within 150 feet	Multiplier =2	<input type="checkbox"/> Untreated stormwater discharges to the wetland	<input type="checkbox"/> Tilled fields or orchards within 150 feet of the wetland	<input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	<input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland	<input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen	<input type="checkbox"/> Other		
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<input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland											
<input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen											
<input type="checkbox"/> Other											
YES = multiplier is 2 NO = multiplier is 1											
Total- Water Quality Functions		Multiply the score from D1 by D2 <i>Add the score to the table on page 1</i>									
		20									

D Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	Points (Only 1 score per box)
D3 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>
D3.1 Characteristics of surface water flows out of the wetland unit: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Unit is a depression with no surface water leaving (no outlet) 4 pts <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet 2 pts <input type="checkbox"/> Unit is flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch 1 pt <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i> <input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) 0 pts 	2
D3.2 Depth of Storage during wet periods <i>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).</i> <ul style="list-style-type: none"> <input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet 7 pts <input type="checkbox"/> The wetland is a headwater wetland 5 pts <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from the surface or bottom of outlet 5 pts <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from the surface or bottom of outlet 3 pts <input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7) but has small depressions on the surface that trap water 1 pt <input type="checkbox"/> Marks of ponding less than 0.5 ft 0 pts 	3
D3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of: the area of upstream basin contributing surface water to the wetland, to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit 5 pts <input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit 3 pts <input type="checkbox"/> The area of the basin is more than 100 times the area of the unit 0 pt <input type="checkbox"/> Entire unit is in the FLATS class 5 pts 	3
Total for D3	Add the points in the boxes above
D4 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the wetland is in a location in the watershed where it provides flood storage, or reduction in water velocity; it 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 floodgate, tide gate, flap valve, reservoir, etc.; OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input checked="" type="checkbox"/> Other: <i>wetland has not outlet and impounds surface runoff water that might otherwise flow into salmonid habitat</i> YES = multiplier is 2 NO = multiplier is 1 	<i>(see p. 49)</i> Multiplier = 2
Total- Hydrologic Functions	Multiply the score from D3 by D4 Add score to table on page 1

These question apply to wetlands of all HGM classes		Points (Only 1 score per box)
HABITAT FUNCTIONS -Indicators that unit functions to provide important habitat		
H1. Does the wetland unit have the potential to provide habitat for many species?		
H1.1 Vegetation structure (see p. 72) <i>Check the types of vegetation classes present (as defined in Cowardin) - Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</i>	<input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub- areas where shrubs have >30% cover <input checked="" type="checkbox"/> Forested- areas where trees have >30% cover	Figure n/a 1
<i>If the unit has a forested class, check if:</i>	<input type="checkbox"/> Forested areas have three out of five strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon	
<i>Add the number of vegetation types that qualify. If you have:</i>	Map of Cowardin vegetation classes 4 or more structures 4 pts 3 structures 2 pts 2 structures 1 pt 1 structure 0 pts	
H1.2 Hydroperiods (see p. 73) <i>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (see text for descriptions of hydroperiods).</i>	<input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland	Figure n/a 0
	Map of hydroperiods <input type="checkbox"/> Lake-fringe wetland 2 pts <input type="checkbox"/> Freshwater tidal wetland 2 pts	
H1.3 Richness of Plant Species (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 square feet. (Different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian Milfoil, reed canary grass, purple loosestrife, or Canadian thistle</i>	Number of Species Counted: <input type="checkbox"/> >19 species 2 pts <input checked="" type="checkbox"/> 5-19 species 1 pt <input type="checkbox"/> <5 species 0 pts	1
<i>List of species counted (not required):</i>		

Total for page

<p>H1.4. Interspersion of Habitats (see p. 76) Decide from the diagrams below, whether interspersion between Cowardin vegetation classes (described in H1.1), or the classes and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <p>None = 0 points </p> <p>Low = 1 point </p> <p>Moderate = 2 points  </p> <p>High = 3 points   </p> <p>(Riparian braided channels)</p> <p>NOTE: If you have four or more classes or three vegetation classes and open water, the rating is always "high." Use map of Cowardin vegetation classes</p>	<p>Figure n/a 1</p>
<p>H1.5 Special Habitat Features (see p. 77) <i>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the points column.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4 inches diameter and 6ft long)</p> <p><input type="checkbox"/> Standing snags in the wetland (diameter at bottom >4 inches)</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6ft (2m) and/or overhanging vegetation which extends at least 3.3ft (1m) over a stream for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present</p> <p><input checked="" type="checkbox"/> At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in area that are permanently or seasonally inundated (structures for egg-laying by amphibians)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p><i>Note: the 20% stated in early printings of the manual on page 78 is an error.</i></p>	<p>2</p>
<p>H1. Total Score – potential for providing habitat</p> <p><i>Add the scores in all H1 columns above</i></p>	<p>5</p>

Comments:

H2. Does the wetland unit have the <u>opportunity</u> to provide habitat for many species?		
H2.1 Buffers (see p. 80)		Figure n/a
	<i>Choose the description that best represents the condition of the 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."</i>	4
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. No structures are within undisturbed part of buffer. (Relatively undisturbed also means no-grazing, no landscaping, no daily human use.)	5 pts	
<input checked="" type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	4 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference.	4 pts	
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference.	3 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	3 pts	
If the buffer does not meet any of the above criteria		
<input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80ft) of wetland >95% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> Heavy grazing in the buffer.	1 pt	
<input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).	0 pts	
<input type="checkbox"/> Buffer does not meet any of the criteria above.	1 pt	
Aerial photo showing buffers		
H2.2 Corridors and Connections (see p. 81)		4
H2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150ft wide, has at least 30% cover of shrubs, forest, or native undisturbed prairie, that connects to estuaries, other wetlands, or undisturbed uplands that are at least 250 acres in size? <i>Dams in riparian corridors, heavily used gravel roads, and paved roads are considered breaks in the corridor.</i>		
YES = 4 points (go to question H 2.3) NO = go to question H2.2.2		
H2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands, or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above.		
YES = 2 points (go to question H2.3) NO = go to question H2.2.3.		
H2.2.3 Is the wetland:		
<input type="checkbox"/> within five miles (8km) of a brackish or salt water estuary OR		
<input type="checkbox"/> within three miles of a large field or pasture (>40 acres) OR		
<input type="checkbox"/> within one mile of a lake greater than 20 acres?		
YES = 1 point NO = 0 points		
Total for page		

H2.3 Near or adjacent to other priority habitats listed by WDFW (*see new and complete descriptions of WDFW priority habitat, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>*)

1

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 0.4ha (1 acre).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife. (Full description in WDFW PHS report p. 152).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/ Mature Forests:** Old growth west of Cascade crest- Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) which are >81 cm (32 in) dbh or > 200 yrs of age. Mature Forests- Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100% ; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth; 80-200 yr old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full description 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 wet prairie (full description 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore (full description of habitats and the definition of relatively undisturbed are in WDFW PHS report p. 167-169, and glossary in Appendix A).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 7.6 m (25ft) high and occurring below 5000ft.
- Talus:** Homogeneous areas of rock rubble ranging in average size from 0.15 to 2.0 m (0.5 to 6.5ft), composed as basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/ use by wildlife. Priority snags have a DBH of >51 cm (20 in) in Western Washington and are >2M (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 the wetland has 3 or more priority habitats	4 pts
2 priority habitats	3 pts
1 priority habitat	1 pt
no priority habitats	0 pts

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4)

H2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p.84)		
<input checked="" type="checkbox"/> There are at least three other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, field, or other development).	5 pts	5
<input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are three other lake-fringe wetlands within ½ mile.	5 pts	
<input type="checkbox"/> There are at least three other wetlands within ½ mile, BUT the connection between them is disturbed.	3 pts	
<input type="checkbox"/> The wetland is Lake-fringe on a lake WITH disturbance and there are three other lake-fringe wetlands within ½ mile.	3 pts	
<input type="checkbox"/> There is at least one other wetland within ½ mile.	2 pts	
<input type="checkbox"/> There are no other wetlands within ½ mile.	0 pts	
H2. Total Score - opportunity to provide habitat		14
	<i>Add the scores in all of the H2 columns above</i>	
Total for H1		5
Total Score for Habitat Functions	<i>Add the points from the total H1 and H2 boxes</i>	19
	<i>Add the score to table on page 1</i>	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	CATEGORY
SC 1.0 Estuarine Wetlands (see p. 86) Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity of greater than 0.5 ppt. YES = go to question 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 question SC 1.2	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and less than 10% cover of non-native plant species). If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II, while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> 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

<p>SC. 2.0 Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage Wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p>Verified through: <input type="checkbox"/> S/T/R information in Appendix D, or <input type="checkbox"/> Accessed from WNHP/DNR website</p> <p>YES = Contact WNHP/DNR (see p. 79) and go to question SC 2.2 NO = _____</p> <p>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?</p> <p>YES = Category I NO = _____ not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (see p. 87)</p> <p>Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If the answer yes you will still need rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> 1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats, or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a filed 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 rating purposes 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, is present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of total shrub and herbaceous cover consists of species in Table 3)? YES = is a bog for purposes of rating NO = go to question 4 	
<p>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.</p> <ol style="list-style-type: none"> 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 total shrub/herbaceous cover)? YES = Category I NO = is not a bog for the purposes of rating 	Cat. I

SC 4.0 Forested Wetland (see p. 90)

Does the wetland unit have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife's forest as priority habitats? *If the answer is YES the wetland still needs to be rated based on its functions.*

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

NOTE: The criterion for dbh is based on measurement for upland forests. Two-hundred year old trees in wetland 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 to 200 years old OR have average dbh exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth.

Cat. I

YES = Category I NO = not a forested wetland with special characteristics

SC 5.0 Wetlands in Coastal Lagoons (see p. 91)

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.

The lagoon in which the wetland is located contains surface water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*).

YES = go to question 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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

The wetland is larger than 1/10 acre (4350 square feet).

Cat. I

Cat. II

YES = Category I NO = Category II

SC 6.0 Interdunal Wetlands (see p. 93)

Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership of WBUO)?

YES = go to question SC6.1 NO = ___ not an interdunal wetland for rating

If the answer is YES the wetland still need to be rated based on its functions.

In practical terms that mean the following geographic areas:

- The 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 a mosaic of wetlands that is one acre or larger?

YES = Category II NO = go to question SC 6.2

Cat. II

SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that are between 0.1 and 1 acre?

YES = Category III

Cat. III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p.

1. If NO was answered for all types enter "Not Applicable" on p. 1.

WETLAND RATING FORM – WESTERN WASHINGTON

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

Project: Van Wyck

Date of site visit: 8/14/13

Name of wetland (if known): Wetland F

Rated by: V. Jackson

Trained by Ecology? Yes No

Date of Training:

SEC: 7 TWNSHP: 38N RNGE: 3E Is S/T/R in Appendix D? Yes No **Map of wetland unit: Figure n/a Estimated size: 0.01 acres****SUMMARY OF RATING****Category based on FUNCTIONS provide by wetland**I II III IV

Category I = Score \geq 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	16
Score for Habitat Functions	14
TOTAL score for Functions	50

Category based on SPECIAL CHARACTERISTICS of wetlandI II Does not apply **Final Category (choose the “highest” category from above)****III****Summary of basic information about the wetland unit**

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	<input type="checkbox"/>	Depressional <input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine <input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe <input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope <input type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats <input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal <input type="checkbox"/>
Interdunal	<input type="checkbox"/>	
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present <input type="checkbox"/>

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

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

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

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

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

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO = go to question 2 **YES** = the wetland class is **Tidal Fringe**

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

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

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

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

NO = go to question 3 **YES** = the wetland class is **Flats**

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

3. Does the entire wetland unit meet **both** of the following criteria?

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8ha) in size;
- At least 30% of the open water area is deeper than 6.6ft (2m)?

NO = go to question 4 **YES** = the wetland class is **Lake-fringe (Lacustrine Fringe)**

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

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

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

NO = go to question 5 **YES** = the wetland class is **Slope**

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

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

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

NO = go to question 6 YES = the wetland class is Riverine

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

NO = go to question 7 YES = the wetland class is Depressional

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

NO = go to question 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 of 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.

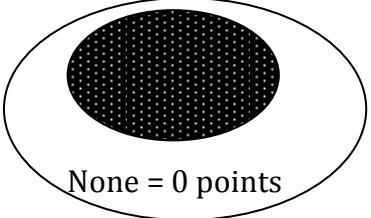
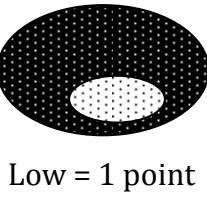
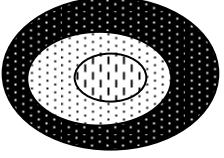
<i>HGM Classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake Fringe	Depressional
Salt Water Tidal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

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

D Depressional and Flats Wetlands WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve the water quality		Points (Only 1 score per box)
D1. Does the wetland unit have the potential to improve water quality?		(see p. 38)
D1.1 Characteristics of surface water flows out of the wetland:		Figure n/a
<input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)	3 pts	
<input type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	3
<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	1 pt	
<input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	1 pt	
<i>(If ditch is not permanently flowing, treat unit as "intermittently flowing") Provide photo or drawing</i>		
S1.2 The soil two inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)	<input type="checkbox"/> YES 4 pts <input checked="" type="checkbox"/> NO 0 pts	0
D1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):		Figure n/a
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in >95% of the area	5 pts	
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{2}$ of the area	3 pts	3
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{10}$ of the area	1 pt	
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in < $\frac{1}{10}$ of the area	0 pts	
Map of Cowardin vegetation classes		
D1.4 Characteristics of seasonal ponding or inundation.		Figure n/a
<i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i>		4
<input checked="" type="checkbox"/> Area seasonally ponded is $> \frac{1}{2}$ total area of the wetland	4 pts	
<input type="checkbox"/> Area seasonally ponded is $> \frac{1}{4}$ total area of the wetland	2 pts	
<input type="checkbox"/> Area seasonally ponded is < $\frac{1}{4}$ total area of the wetland	0 pts	
Map of Hydroperiods		
Total for D1	<i>Add the points in the boxes above</i>	10
D2 Does the wetland unit have the opportunity to improve water quality?		(see p. 44)
<i>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce quality in streams, lakes, or groundwater down gradient 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.</i>		
<input type="checkbox"/> Grazing in the wetland or within 150 feet		Multiplier
<input type="checkbox"/> Untreated stormwater discharges to the wetland		=2
<input type="checkbox"/> Tilled fields or orchards within 150 feet of the wetland		
<input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging		
<input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland		
<input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen		
<input type="checkbox"/> Other		
YES = multiplier is 2 NO = multiplier is 1		
Total- Water Quality Functions	Multiply the score from D1 by D2 <i>Add the score to the table on page 1</i>	20

D Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	Points (Only 1 score per box)
D3 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>
D3.1 Characteristics of surface water flows out of the wetland unit: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Unit is a depression with no surface water leaving (no outlet) 4 pts <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet 2 pts <input type="checkbox"/> Unit is flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch 1 pt <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i> <input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) 0 pts 	2
D3.2 Depth of Storage during wet periods <i>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).</i> <ul style="list-style-type: none"> <input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet 7 pts <input type="checkbox"/> The wetland is a headwater wetland 5 pts <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from the surface or bottom of outlet 5 pts <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from the surface or bottom of outlet 3 pts <input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7) but has small depressions on the surface that trap water 1 pt <input type="checkbox"/> Marks of ponding less than 0.5 ft 0 pts 	3
D3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of: the area of upstream basin contributing surface water to the wetland, to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit 5 pts <input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit 3 pts <input type="checkbox"/> The area of the basin is more than 100 times the area of the unit 0 pt <input type="checkbox"/> Entire unit is in the FLATS class 5 pts 	3
Total for D3	Add the points in the boxes above 8
D4 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the wetland is in a location in the watershed where it provides flood storage, or reduction in water velocity; it 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 floodgate, tide gate, flap valve, reservoir, etc.; OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input checked="" type="checkbox"/> Other: <i>wetland has not outlet and impounds surface runoff water that might otherwise flow into salmonid habitat</i> YES = multiplier is 2 NO = multiplier is 1 	<i>(see p. 49)</i> Multiplier = 2
Total- Hydrologic Functions	Multiply the score from D3 by D4 Add score to table on page 1 16

These question apply to wetlands of all HGM classes		Points (Only 1 score per box)								
HABITAT FUNCTIONS -Indicators that unit functions to provide important habitat										
H1. Does the wetland unit have the potential to provide habitat for many species?										
H1.1 Vegetation structure (see p. 72)		Figure n/a								
<p><i>Check the types of vegetation classes present (as defined in Cowardin) - Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</i></p> <p><input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub- areas where shrubs have >30% cover <input type="checkbox"/> Forested- areas where trees have >30% cover</p> <p><i>If the unit has a forested class, check if:</i></p> <p><input type="checkbox"/> Forested areas have three out of five strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon</p> <p><i>Add the number of vegetation types that qualify. If you have:</i></p>		0								
<p>Map of Cowardin vegetation classes</p> <table> <tr> <td>4 or more structures</td> <td>4 pts</td> </tr> <tr> <td>3 structures</td> <td>2 pts</td> </tr> <tr> <td>2 structures</td> <td>1 pt</td> </tr> <tr> <td>1 structure</td> <td>0 pts</td> </tr> </table>		4 or more structures	4 pts	3 structures	2 pts	2 structures	1 pt	1 structure	0 pts	
4 or more structures	4 pts									
3 structures	2 pts									
2 structures	1 pt									
1 structure	0 pts									
H1.2 Hydroperiods (see p. 73)		Figure n/a								
<p><i>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (see text for descriptions of hydroperiods).</i></p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p>Map of hydroperiods</p> <p><input type="checkbox"/> Lake-fringe wetland <input type="checkbox"/> Freshwater tidal wetland</p>		0								
H1.3 Richness of Plant Species (see p. 75)		1								
<p>Count the number of plant species in the wetland that cover at least 10 square feet. (<i>Different patches of the same species can be combined to meet the size threshold</i>)</p> <p><i>You do not have to name the species.</i></p> <p>Do not include Eurasian Milfoil, reed canary grass, purple loosestrife, or Canadian thistle</p> <p>Number of Species Counted:</p> <p><input type="checkbox"/> >19 species <input checked="" type="checkbox"/> 5-19 species <input type="checkbox"/> <5 species</p> <p>List of species counted (not required):</p>										
		Total for page								

<p>H1.4. Interspersion of Habitats (see p. 76) Decide from the diagrams below, whether interspersion between Cowardin vegetation classes (described in H1.1), or the classes and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>(Riparian braided channels)</p> </div> </div> <p>NOTE: If you have four or more classes or three vegetation classes and open water, the rating is always "high." Use map of Cowardin vegetation classes</p>	Figure n/a 0
<p>H1.5 Special Habitat Features (see p. 77) <i>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the points column.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (>4 inches diameter and 6ft long)</p> <p><input type="checkbox"/> Standing snags in the wetland (diameter at bottom >4 inches)</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6ft (2m) and/or overhanging vegetation which extends at least 3.3ft (1m) over a stream for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present</p> <p><input type="checkbox"/> At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in area that are permanently or seasonally inundated (structures for egg-laying by amphibians)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p><i>Note: the 20% stated in early printings of the manual on page 78 is an error.</i></p>	0
<p>H1. Total Score – potential for providing habitat</p> <p style="text-align: right;"><i>Add the scores in all H1 columns above</i></p>	1

Comments:

H2. Does the wetland unit have the <u>opportunity</u> to provide habitat for many species?		
H2.1 Buffers (see p. 80)		Figure n/a
	Choose the description that best represents the condition of the 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."	4
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. No structures are within undisturbed part of buffer. (Relatively undisturbed also means no-grazing, no landscaping, no daily human use.)	5 pts	
<input checked="" type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	4 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference.	4 pts	
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference.	3 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	3 pts	
If the buffer does not meet any of the above criteria		
<input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80ft) of wetland >95% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> Heavy grazing in the buffer.	1 pt	
<input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).	0 pts	
<input type="checkbox"/> Buffer does not meet any of the criteria above.	1 pt	
Aerial photo showing buffers		
H2.2 Corridors and Connections (see p. 81)		4
H2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150ft wide, has at least 30% cover of shrubs, forest, or native undisturbed prairie, that connects to estuaries, other wetlands, or undisturbed uplands that are at least 250 acres in size? <i>Dams in riparian corridors, heavily used gravel roads, and paved roads are considered breaks in the corridor.</i>		
YES = 4 points (go to question H 2.3) NO = go to question H2.2.2		
H2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands, or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above.		
YES = 2 points (go to question H2.3) NO = go to question H2.2.3.		
H2.2.3 Is the wetland:		
<input type="checkbox"/> within five miles (8km) of a brackish or salt water estuary OR		
<input type="checkbox"/> within three miles of a large field or pasture (>40 acres) OR		
<input type="checkbox"/> within one mile of a lake greater than 20 acres?		
YES = 1 point NO = 0 points		
Total for page		

<p>H2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitat, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm</i>)</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife. (Full description in WDFW PHS report p. 152).</p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> 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) which are >81 cm (32 in) dbh or > 200 yrs of age. Mature Forests- Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100% ; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth; 80-200 yr old west of the Cascade crest.</p> <p><input type="checkbox"/> Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full description in WDFW PHS report p. 158)</p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or wet prairie (full description in WDFW PHS report p. 161).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore (full description of habitats and the definition of relatively undisturbed are in WDFW PHS report p. 167-169, and glossary in Appendix A).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25ft) high and occurring below 5000ft.</p> <p><input type="checkbox"/> Talus: Homogeneous areas of rock rubble ranging in average size from 0.15 to 2.0 m (0.5 to 6.5ft), composed as basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> 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 DBH of >51 cm (20 in) in Western Washington and are >2M (6.5 ft) in height. Priority logs are >30 cm (12 in) in diameter at the largest end and >6 m (20 ft) long.</p> <table> <tbody> <tr> <td>If the wetland has 3 or more priority habitats</td> <td>4 pts</td> </tr> <tr> <td>2 priority habitats</td> <td>3 pts</td> </tr> <tr> <td>1 priority habitat</td> <td>1 pt</td> </tr> <tr> <td>no priority habitats</td> <td>0 pts</td> </tr> </tbody> </table> <p><i>Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4)</i></p>	If the wetland has 3 or more priority habitats	4 pts	2 priority habitats	3 pts	1 priority habitat	1 pt	no priority habitats	0 pts	0
If the wetland has 3 or more priority habitats	4 pts								
2 priority habitats	3 pts								
1 priority habitat	1 pt								
no priority habitats	0 pts								

H2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p.84)		5
<input checked="" type="checkbox"/> There are at least three other wetlands within $\frac{1}{2}$ 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, field, or other development). 5 pts		
<input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are three other lake-fringe wetlands within $\frac{1}{2}$ mile. 5 pts		
<input type="checkbox"/> There are at least three other wetlands within $\frac{1}{2}$ mile, BUT the connection between them is disturbed. 3 pts		
<input type="checkbox"/> The wetland is Lake-fringe on a lake WITH disturbance and there are three other lake-fringe wetlands within $\frac{1}{2}$ mile. 3 pts		
<input type="checkbox"/> There is at least one other wetland within $\frac{1}{2}$ mile. 2 pts		
<input type="checkbox"/> There are no other wetlands within $\frac{1}{2}$ mile. 0 pts		
H2. Total Score - opportunity to provide habitat		13
<i>Add the scores in all of the H2 columns above</i>		
Total for H1		1
Total Score for Habitat Functions		14
<i>Add the points from the total H1 and H2 boxes</i>		
<i>Add the score to table on page 1</i>		

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	CATEGORY
SC 1.0 Estuarine Wetlands (see p. 86) Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity of greater than 0.5 ppt. YES = go to question 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 question SC 1.2	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and less than 10% cover of non-native plant species). If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II, while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> 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

<p>SC. 2.0 Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage Wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p>Verified through: <input type="checkbox"/> S/T/R information in Appendix D, or <input type="checkbox"/> Accessed from WNHP/DNR website</p> <p>YES = Contact WNHP/DNR (see p. 79) and go to question SC 2.2 NO = _____</p> <p>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?</p> <p>YES = Category I NO = _____ not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (see p. 87)</p> <p>Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If the answer yes you will still need rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> 1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats, or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a filed 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 rating purposes 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, is present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of total shrub and herbaceous cover consists of species in Table 3)? YES = is a bog for purposes of rating NO = go to question 4 	
<p>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.</p> <ol style="list-style-type: none"> 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 total shrub/herbaceous cover)? YES = Category I NO = is not a bog for the purposes of rating 	Cat. I

SC 4.0 Forested Wetland (see p. 90)

Does the wetland unit have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife's forest as priority habitats? *If the answer is YES the wetland still needs to be rated based on its functions.*

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

NOTE: The criterion for dbh is based on measurement for upland forests. Two-hundred year old trees in wetland 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 to 200 years old OR have average dbh exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth.

Cat. I

YES = Category I NO = not a forested wetland with special characteristics

SC 5.0 Wetlands in Coastal Lagoons (see p. 91)

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.

The lagoon in which the wetland is located contains surface water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*).

YES = go to question 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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

The wetland is larger than 1/10 acre (4350 square feet).

Cat. I

Cat. II

YES = Category I NO = Category II

SC 6.0 Interdunal Wetlands (see p. 93)

Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership of WBUO)?

YES = go to question SC6.1 NO = ___ not an interdunal wetland for rating

If the answer is YES the wetland still need to be rated based on its functions.

In practical terms that mean the following geographic areas:

- The 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 a mosaic of wetlands that is one acre or larger?

YES = Category II NO = go to question SC 6.2

Cat. II

SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that are between 0.1 and 1 acre?

YES = Category III

Cat. III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p.

1. If NO was answered for all types enter "Not Applicable" on p. 1.

WETLAND RATING FORM – WESTERN WASHINGTON

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

Project: Van Wyck

Date of site visit: 8/14/13

Name of wetland (if known): Wetland H and G

Rated by: V. Jackson

Trained by Ecology? Yes No

Date of Training:

SEC: 7 TWNSHP: 38N RNGE: 3E Is S/T/R in Appendix D? Yes No **Map of wetland unit: Figure n/a Estimated size: 0.02 and 0.01 acres****SUMMARY OF RATING****Category based on FUNCTIONS provide by wetland**I II III IV

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

Score for Water Quality Functions	6
Score for Hydrologic Functions	10
Score for Habitat Functions	16
TOTAL score for Functions	32

Category based on SPECIAL CHARACTERISTICS of wetlandI II Does not apply **Final Category (choose the “highest” category from above)****III****Summary of basic information about the wetland unit**

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	<input type="checkbox"/>	Depressional <input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine <input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe <input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope <input type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats <input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal <input type="checkbox"/>
Interdunal	<input type="checkbox"/>	
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present <input type="checkbox"/>

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

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

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

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

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

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the wetland usually controlled by tides (i.e. except during floods)?

NO = go to question 2 **YES** = the wetland class is **Tidal Fringe**

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

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

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

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

NO = go to question 3 **YES** = the wetland class is **Flats**

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

3. Does the entire wetland unit meet **both** of the following criteria?

- The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8ha) in size;
- At least 30% of the open water area is deeper than 6.6ft (2m)?

NO = go to question 4 **YES** = the wetland class is **Lake-fringe (Lacustrine Fringe)**

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

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

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

NO = go to question 5 **YES** = the wetland class is **Slope**

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

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

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

NO = go to question 6 YES = the wetland class is Riverine

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

NO = go to question 7 YES = the wetland class is Depressional

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

NO = go to question 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 of 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.

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

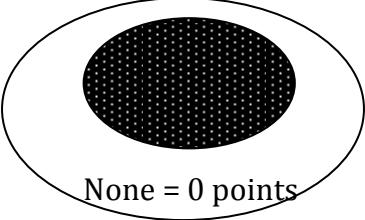
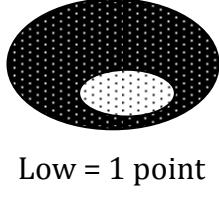
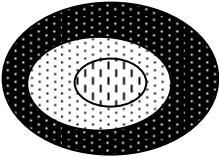
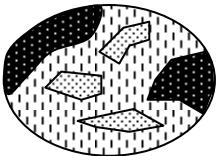
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

D Depressional and Flats Wetlands WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve the water quality		Points (Only 1 score per box)
D1. Does the wetland unit have the <u>potential</u> to improve water quality?		(see p. 38)
D1.1 Characteristics of surface water flows out of the wetland:		
<input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)	3 pts	Figure n/a
<input type="checkbox"/> Unit has intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	
<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	1 pt	
<input type="checkbox"/> Unit is a flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	1 pt	
<i>(If ditch is not permanently flowing, treat unit as "intermittently flowing") Provide photo or drawing</i>		
S1.2 The soil two inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	<input type="checkbox"/> YES 4 pts <input checked="" type="checkbox"/> NO 0 pts	0
D1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):		Figure n/a
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in >95% of the area	5 pts	
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{2}$ of the area	3 pts	
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in $\geq \frac{1}{10}$ of the area	1 pt	
<input type="checkbox"/> Wetland has persistent, ungrazed, vegetation in < 1/10 of the area	0 pts	
Map of Cowardin vegetation classes		
D1.4 Characteristics of seasonal ponding or inundation.		Figure n/a
<i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.</i>		
<input type="checkbox"/> Area seasonally ponded is $> \frac{1}{2}$ total area of the wetland	4 pts	
<input type="checkbox"/> Area seasonally ponded is $> \frac{1}{4}$ total area of the wetland	2 pts	
<input checked="" type="checkbox"/> Area seasonally ponded is $< \frac{1}{4}$ total area of the wetland	0 pts	
Map of Hydroperiods		
Total for D1	<i>Add the points in the boxes above</i>	6
D2 Does the wetland unit have the <u>opportunity</u> to improve water quality?		(see p. 44)
<i>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce quality in streams, lakes, or groundwater down gradient 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.</i>		
<input type="checkbox"/> Grazing in the wetland or within 150 feet		Multiplier =1
<input type="checkbox"/> Untreated stormwater discharges to the wetland		
<input type="checkbox"/> Tilled fields or orchards within 150 feet of the wetland		
<input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging		
<input type="checkbox"/> Residential, urban areas, or golf courses are within 150 feet of wetland		
<input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen		
<input type="checkbox"/> Other		
YES = multiplier is 2 NO = multiplier is 1		
Total- Water Quality Functions	Multiply the score from D1 by D2 <i>Add the score to the table on page 1</i>	6

D Depressional and Flats Wetlands		Points (Only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
D3 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>	
D3.1 Characteristics of surface water flows out of the wetland unit:		
<input checked="" type="checkbox"/> Unit is a depression with no surface water leaving (no outlet)	4 pts	2
<input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet	2 pts	
<input type="checkbox"/> Unit is flat depression (Q.7), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch <i>(If ditch is not permanently flowing, treat unit as "intermittently flowing")</i>	1 pt	
<input type="checkbox"/> Unit has an un-constricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)	0 pts	
D3.2 Depth of Storage during wet periods <i>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).</i>		0
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	7 pts	
<input type="checkbox"/> The wetland is a headwater wetland	5 pts	
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from the surface or bottom of outlet	5 pts	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from the surface or bottom of outlet	3 pts	
<input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7) but has small depressions on the surface that trap water	1 pt	
<input checked="" type="checkbox"/> Marks of ponding less than 0.5 ft	0 pts	
D3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of: the area of upstream basin contributing surface water to the wetland, to the area of the wetland unit itself.</i>		3
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	5 pts	
<input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	3 pts	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit	0 pt	
<input type="checkbox"/> Entire unit is in the FLATS class	5 pts	
Total for D3	<i>Add the points in the boxes above</i>	5
D4 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	<i>(see p. 49)</i>	
Answer YES if the wetland is in a location in the watershed where it provides flood storage, or reduction in water velocity; it 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 floodgate, 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.	Multiplier =2	
<i>Note which of the following indicators of opportunity apply.</i>		
<input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems		
<input type="checkbox"/> Wetland drains to a river or stream that has flooding problems		
<input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems		
<input checked="" type="checkbox"/> Other: <i>wetland has not outlet and impounds surface runoff water that might otherwise flow into salmonid habitat</i>	YES = multiplier is 2	NO = multiplier is 1
Total- Hydrologic Functions	Multiply the score from D3 by D4 <i>Add score to table on page 1</i>	10

These question apply to wetlands of all HGM classes		Points (Only 1 score per box)
HABITAT FUNCTIONS -Indicators that unit functions to provide important habitat		
H1. Does the wetland unit have the potential to provide habitat for many species?		
H1.1 Vegetation structure (see p. 72)		Figure n/a
<i>Check the types of vegetation classes present (as defined in Cowardin) - Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</i>		1
<input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub- areas where shrubs have >30% cover <input type="checkbox"/> Forested- areas where trees have >30% cover		
<i>If the unit has a forested class, check if:</i>		
<input type="checkbox"/> Forested areas have three out of five strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon		
<i>Add the number of vegetation types that qualify. If you have:</i>		
	4 or more structures	4 pts
Map of Cowardin vegetation classes	3 structures	2 pts
	2 structures	1 pt
	1 structure	0 pts
H1.2 Hydroperiods (see p. 73)		Figure n/a
<i>Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (see text for descriptions of hydroperiods).</i>		0
<input type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland	4 or more present 3 present 2 present 1 present	3 pts 2 pts 1 pt 0 pts
	Map of hydroperiods	
<input type="checkbox"/> Lake-fringe wetland <input type="checkbox"/> Freshwater tidal wetland		2 pts 2 pts
H1.3 Richness of Plant Species (see p. 75)		1
Count the number of plant species in the wetland that cover at least 10 square feet. (<i>Different patches of the same species can be combined to meet the size threshold</i>)		
<i>You do not have to name the species.</i>		
Do not include Eurasian Milfoil, reed canary grass, purple loosestrife, or Canadian thistle		
Number of Species Counted:		
<input type="checkbox"/> >19 species <input checked="" type="checkbox"/> 5-19 species <input type="checkbox"/> <5 species		2 pts 1 pt 0 pts
List of species counted (not required):		

Total for page

<p>H1.4. Interspersion of Habitats (see p. 76) Decide from the diagrams below, whether interspersion between Cowardin vegetation classes (described in H1.1), or the classes and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>(Riparian braided channels)</p> </div> </div> <p>NOTE: If you have four or more classes or three vegetation classes and open water, the rating is always "high." Use map of Cowardin vegetation classes</p>	Figure n/a 0
<p>H1.5 Special Habitat Features (see p. 77) <i>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the points column.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (>4 inches diameter and 6ft long)</p> <p><input type="checkbox"/> Standing snags in the wetland (diameter at bottom >4 inches)</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6ft (2m) and/or overhanging vegetation which extends at least 3.3ft (1m) over a stream for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present</p> <p><input type="checkbox"/> At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in area that are permanently or seasonally inundated (structures for egg-laying by amphibians)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p><i>Note: the 20% stated in early printings of the manual on page 78 is an error.</i></p>	0
<p>H1. Total Score – potential for providing habitat</p> <p style="text-align: right;"><i>Add the scores in all H1 columns above</i></p>	2

Comments:

H2. Does the wetland unit have the <u>opportunity</u> to provide habitat for many species?		
H2.1 Buffers (see p. 80)		n/a
<i>Choose the description that best represents the condition of the 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."</i>		4
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. No structures are within undisturbed part of buffer. (Relatively undisturbed also means no-grazing, no landscaping, no daily human use.)	5 pts	
<input checked="" type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	4 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference.	4 pts	
<input type="checkbox"/> 100m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference.	3 pts	
<input type="checkbox"/> 50m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference.	3 pts	
If the buffer does not meet any of the above criteria		
<input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80ft) of wetland >95% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK.	2 pts	
<input type="checkbox"/> Heavy grazing in the buffer.	1 pt	
<input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).	0 pts	
<input type="checkbox"/> Buffer does not meet any of the criteria above.	1 pt	
Aerial photo showing buffers		
H2.2 Corridors and Connections (see p. 81)		4
H2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150ft wide, has at least 30% cover of shrubs, forest, or native undisturbed prairie, that connects to estuaries, other wetlands, or undisturbed uplands that are at least 250 acres in size? <i>Dams in riparian corridors, heavily used gravel roads, and paved roads are considered breaks in the corridor.</i>		
YES = 4 points (go to question H 2.3) NO = go to question H2.2.2		
H2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands, or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above.		
YES = 2 points (go to question H2.3) NO = go to question H2.2.3.		
H2.2.3 Is the wetland:		
<input type="checkbox"/> within five miles (8km) of a brackish or salt water estuary OR		
<input type="checkbox"/> within three miles of a large field or pasture (>40 acres) OR		
<input type="checkbox"/> within one mile of a lake greater than 20 acres?		
YES = 1 point NO = 0 points		
Total for page		

<p>H2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitat, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm</i>)</p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife. (Full description in WDFW PHS report p. 152).</p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> 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) which are >81 cm (32 in) dbh or > 200 yrs of age. Mature Forests- Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100% ; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth; 80-200 yr old west of the Cascade crest.</p> <p><input type="checkbox"/> Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full description in WDFW PHS report p. 158)</p> <p><input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or wet prairie (full description in WDFW PHS report p. 161).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore (full description of habitats and the definition of relatively undisturbed are in WDFW PHS report p. 167-169, and glossary in Appendix A).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25ft) high and occurring below 5000ft.</p> <p><input type="checkbox"/> Talus: Homogeneous areas of rock rubble ranging in average size from 0.15 to 2.0 m (0.5 to 6.5ft), composed as basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> 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 DBH of >51 cm (20 in) in Western Washington and are >2M (6.5 ft) in height. Priority logs are >30 cm (12 in) in diameter at the largest end and >6 m (20 ft) long.</p> <table> <tbody> <tr> <td>If the wetland has 3 or more priority habitats</td> <td>4 pts</td> </tr> <tr> <td>2 priority habitats</td> <td>3 pts</td> </tr> <tr> <td>1 priority habitat</td> <td>1 pt</td> </tr> <tr> <td>no priority habitats</td> <td>0 pts</td> </tr> </tbody> </table> <p><i>Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4)</i></p>	If the wetland has 3 or more priority habitats	4 pts	2 priority habitats	3 pts	1 priority habitat	1 pt	no priority habitats	0 pts	1
If the wetland has 3 or more priority habitats	4 pts								
2 priority habitats	3 pts								
1 priority habitat	1 pt								
no priority habitats	0 pts								

H2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p.84)		
<input checked="" type="checkbox"/> There are at least three other wetlands within $\frac{1}{2}$ 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, field, or other development).	5 pts	5
<input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are three other lake-fringe wetlands within $\frac{1}{2}$ mile.	5 pts	
<input type="checkbox"/> There are at least three other wetlands within $\frac{1}{2}$ mile, BUT the connection between them is disturbed.	3 pts	
<input type="checkbox"/> The wetland is Lake-fringe on a lake WITH disturbance and there are three other lake-fringe wetlands within $\frac{1}{2}$ mile.	3 pts	
<input type="checkbox"/> There is at least one other wetland within $\frac{1}{2}$ mile.	2 pts	
<input type="checkbox"/> There are no other wetlands within $\frac{1}{2}$ mile.	0 pts	
H2. Total Score - opportunity to provide habitat		14
	<i>Add the scores in all of the H2 columns above</i>	
Total for H1		2
Total Score for Habitat Functions	<i>Add the points from the total H1 and H2 boxes</i>	16
	<i>Add the score to table on page 1</i>	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	CATEGORY
SC 1.0 Estuarine Wetlands (see p. 86) Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity of greater than 0.5 ppt. YES = go to question 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 question SC 1.2	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and less than 10% cover of non-native plant species). If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II, while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> 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

<p>SC. 2.0 Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage Wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p>Verified through: <input type="checkbox"/> S/T/R information in Appendix D, or <input type="checkbox"/> Accessed from WNHP/DNR website</p> <p>YES = Contact WNHP/DNR (see p. 79) and go to question SC 2.2 NO = _____</p> <p>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?</p> <p>YES = Category I NO = _____ not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (see p. 87)</p> <p>Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. <i>If the answer yes you will still need rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> 1. Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats, or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a filed 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 rating purposes 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, is present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of total shrub and herbaceous cover consists of species in Table 3)? YES = is a bog for purposes of rating NO = go to question 4 <p>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.</p> <ol style="list-style-type: none"> 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 total shrub/herbaceous cover)? YES = Category I NO = is not a bog for the purposes of rating 	Cat. I

SC 4.0 Forested Wetland (see p. 90)

Does the wetland unit have at least 1 acre of forest that meets one of these criteria for the Department of Fish and Wildlife's forest as priority habitats? *If the answer is YES the wetland still needs to be rated based on its functions.*

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

NOTE: The criterion for dbh is based on measurement for upland forests. Two-hundred year old trees in wetland 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 to 200 years old OR have average dbh exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quality of large downed material is generally less than that found in old-growth.

Cat. I

YES = Category I NO = not a forested wetland with special characteristics

SC 5.0 Wetlands in Coastal Lagoons (see p. 91)

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.

The lagoon in which the wetland is located contains surface water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the lagoon (*needs to be measured near the bottom*).

YES = go to question 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 ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

The wetland is larger than 1/10 acre (4350 square feet).

Cat. I

Cat. II

YES = Category I NO = Category II

<p>SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership of WBUO)?</p> <p>YES = go to question SC6.1 NO = ___ not an interdunal wetland for rating</p> <p><i>If the answer is YES the wetland still need to be rated based on its functions.</i></p> <p>In practical terms that mean the following geographic areas:</p> <ul style="list-style-type: none"><input type="checkbox"/> The Long Beach Peninsula- lands west of SR 103<input type="checkbox"/> Grayland, Westport- lands west of SR 105<input type="checkbox"/> Ocean Shores, Copalis- lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it a mosaic of wetlands that is one acre or larger?</p> <p>YES = Category II NO = go to question SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that are between 0.1 and 1 acre?</p> <p>YES = Category III</p>	
<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If NO was answered for all types enter "Not Applicable" on p. 1.</p>	Cat. II Cat. III

Appendix I -- Qualifications

All field inspections, wetland delineations, habitat assessments, and supporting documentation, including this *Wetland and Fish and Wildlife Habitat Assessment Report* prepared for *Pho Rebuild* site were prepared by, or under the direction of, Jon Pickett of SVC. In addition, the site investigations were performed by Lauren Templeton and Kramer Canup, report preparation was completed by Lauren Templeton, and additional project oversight and final quality assurance / quality control was completed by Kyla Caddey.

Jon Pickett

Associate Principal

Professional Experience: 10+ years

Jon Pickett is an Associate Principal and Senior Scientist with a diverse background in environmental and shoreline compliance and permitting, wetland and stream ecology, fish and wildlife biology, mitigation compliance and design, and environmental planning and land use due diligence. Jon oversees a wide range of large-scale industrial, commercial, and multi-family residential projects throughout Western Washington, providing environmental permitting and regulatory compliance assistance for land use entitlement projects from feasibility through mitigation compliance. Jon performs wetland, stream, and shoreline delineations and fish & wildlife habitat assessments; conducts code and regulation analysis and review; prepares reports and permit applications and documents; provides environmental compliance recommendation; and provides restoration and mitigation design.

Jon earned a Bachelor of Science degree in Natural Resource Sciences from Washington State University and Bachelor of Science and Minor in Forestry from Washington State University. Jon has received 40-hour wetland delineation training (Western Mountains, Valleys, & Coast and Arid West Regional Supplements) and regularly performs wetland, stream, and shoreline delineations. Jon is a Whatcom County Qualified Wetland Specialist and Wildlife Biologist and is a Pierce County Qualified Wetland Specialist. He has been formally trained by WSDOE in the use of the Washington State Wetland Rating System 2014, How to Determine the Ordinary High-Water Mark (Freshwater and Marine), Using Field Indicators for Hydric Soils, and the Using the Credit-Debit Method for Estimating Mitigation Needs.

Kyla Caddey, PWS, Certified Ecologist

Senior Environmental Scientist

Professional Experience: 7 years

Kyla Caddey is a Senior Environmental Scientist with a diverse background in stream and wetland ecology, wildlife ecology and conservation, wildlife and natural resource assessments and monitoring, and riparian habitat restoration at various public and private entities. Kyla has field experience performing in-depth studies in both the Pacific Northwest and Central American ecosystems which included various environmental science research and statistical analysis. Kyla has advanced expertise in federal- and state-listed endangered, threatened, and sensitive species surveys and assessment of aquatic and terrestrial systems throughout the Puget Sound region. She has completed hundreds of wetland delineations and has extensive knowledge and interest in hydric soil identification. As the senior writer, she provides informed project oversight and performs final quality assurance / quality control on various types of scientific reports for agency submittal, including: Biological

Assessments/Evaluations; Wetland, Shoreline, and Fish and Wildlife Habitat Assessments; Mitigation Plans, and Mitigation Monitoring Reports. She currently performs wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; prepares scientific reports; and provides environmental permitting and regulatory compliance assistance to support a wide range of commercial, industrial, and multi-family residential land use projects.

Kyla earned a Bachelor of Science degree in Environmental Science and Resource Management from the University of Washington, Seattle with a focus in Wildlife Conservation and a minor in Quantitative Science. She has also completed additional coursework in Comprehensive Bird Biology from Cornell University. Ms. Caddey is a Certified Professional Wetland Scientist (PWS #3479) through the Society of Wetland Scientists and Certified Ecologist through the Ecological Society of America. She has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement), is a Pierce County Qualified Wetland Specialist and Wildlife Biologist, and is a USFWS-approved Mazama pocket gopher survey biologist. Kyla has been formally trained through the Washington State Department of Ecology, Coastal Training Program, and the Washington Native Plant Society in winter twig and grass, sedge, and rush identification for Western WA; Using the Credit-Debit Method in Estimating Wetland Mitigation Needs; How to Determine the Ordinary High Water Mark; Using Field Indicators for Hydric Soils; How to Administer Development Permits in Washington Shorelines; Puget Sound Coastal Processes; and Forage Fish Survey Techniques. Additionally, she has received formal training in preparing WSDOT Biological Assessments.

Lauren Templeton
Environmental Scientist
Professional Experience: 4 years

Lauren Templeton is an Environmental Scientist with three plus years of experience in conducting wetland delineations, biological surveys, and in-situ water quality monitoring. Lauren has a background in wetland and biological assessments in various states, most notably Washington, Montana, Oregon, and New Mexico. Her project experience includes residential land use and developments, transportation, and water resources projects, working for federal, state, tribal, and private agencies. Lauren has experience developing various environmental documentation including environmental assessments, biological evaluations, mitigation reports, and permit applications at the federal, state and tribal levels. Additionally, Lauren has experience utilizing desktop and remote GIS software and equipment to collect and process data, perform data analysis, and develop delineation exhibits. Lauren currently performs wetland delineations, conducts environmental code analysis, and prepares various environmental compliance documentation including fish and wildlife habitat assessments, biological evaluations, and permit applications.

Lauren graduated from Western Washington University with a Bachelor of Arts in Environmental Science and Policy where she gained hands-on experience associated with water quality, statistical analysis, CERCLA projects, and ecological biomonitoring. Lauren has completed Basic Wetland Delineator Training with the Wetland Training Institute and received 40-hour USACE wetland delineation training. Lauren has been formally trained through the Washington State Department of Ecology, Coastal Training Program, How to Determine the Ordinary High Water Mark and Using the Washington State Wetland Rating System. Additionally, Lauren has been trained through the Shipley Group on the National Environmental Policy Act, Endangered Species Act, National Historic Preservation Act, and Administrative Record.

Kramer Canup

Environmental Project Coordinator

Professional Experience: 5 years

Kramer Canup is an Environmental Project Coordinator with a professional background in project management, habitat restoration, vegetation monitoring, invasive plant management, monitoring protocol development, grant writing, tropical ecology, wildlife monitoring and environmental education. Kramer brings years of experience coordinating logistics for a variety of habitat restoration projects, vegetation monitoring programs, along with study abroad and backpacking courses. Previously, Kramer has managed riparian and upland habitat restoration projects, managed vegetation monitoring programs, and he has taught study abroad courses in the Peruvian Amazon and Andes for the University of Washington. Beyond Kramer's project management and coordination skills, he brings over 10 years of experience performing ecological field work such as vegetation monitoring, plant installation and invasive weed control.

Kramer currently coordinates project logistics, prepares environmental assessment reports, prepares scope of work documents, and assists with field work.